Modular F.R.L. Units



C C B

CAT.ES40-69D

Modular Design with Uniform Body Style

Better visibility & environmental resistance

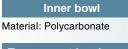


The bowl is covered with a transparent bowl guard!

* Body sizes 30 and larger

The inside is visible from 360°.

 The inner bowl is protected from the environment, allowing for improved safety.



Transparent bowl guard Material: Polycarbonate

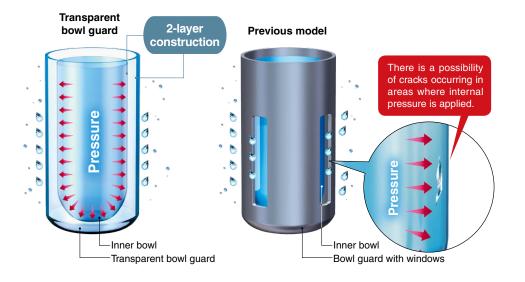
New A right angle square type pressure gauge and various attachments have been added.

Right Angle Square Type Pressure Gauge 0.8 Cross Adapter **p.9** IN Allows for pressure confirmation Allows for devices to be connected from the knob side on the top, bottom, left, and right Right angle square type Cross adapter pressure gauge 0 SUP OUT 1 ➡OUT2 0 Attachment Page LEMPs ILEMPs Right angle adapter 7 Reducing adapter 10 OUTG End plate 70 Air Filter Mist Separator AFM Series AF Series AC Series

Transparent bowl guard

Better environmental resistance: The transparent bowl guard protects the inner bowl!

The bowl guard with windows has been replaced 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 come into direct contact with the pressurized bowl. This can reduce the risk of bowl breakage.





Better visibility: 360°

The transparent bowl guard allows for easy checking of the condensate level inside the filter bowl and the remaining oil amount in the lubricator from any direction.



Applicable model * Body sizes 30 and larger

Air Filter

AF

Mist Separator Micro Mist AFM Separator





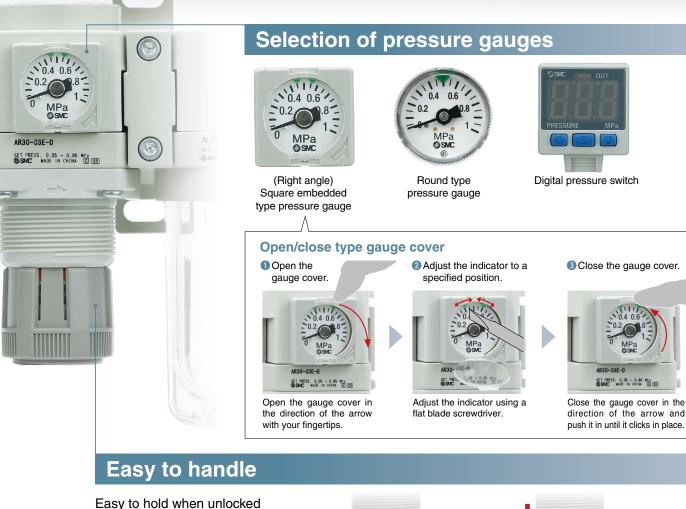


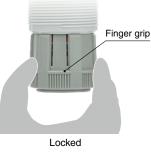
No tools are required.

Easier replacement of the element * AF20-D to AF40-D only



1



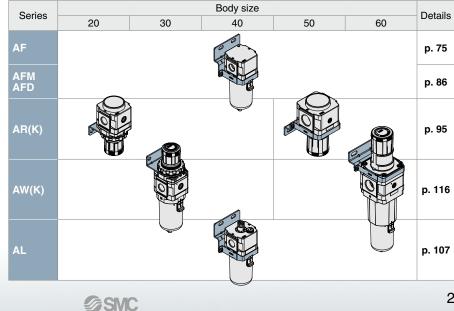




Mounting (Single unit)

.

· The mounting pitch for panel mounting is interchangeable between the AR20(K)-D to AR40(K)-06-D and the AR(K)-B series and between the AW20(K)-D to AW40(K)-06-D and the AW(K)-B series. The brackets and set nuts are the same for both existing and new products.

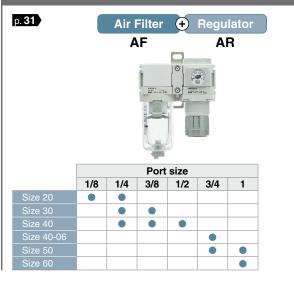


Series Configuration

AC20 to AC60 Series

	Port size					
	1/8	1/4	3/8	1/2	3/4	1
Size 20						
Size 30						
Size 40						
Size 40-06						
Size 50						
Size 60						

AC20B to AC60B Series



AC20D to AC40D Series p. 47 Filter Regulator 🕂 Mist Separator AW AFM Port size 3/4 1/8 1/4 3/8 1/2

AC20A to AC60A Series

	Port size					
	1/8	1/4	3/8	1/2	3/4	1
Size 20						
Size 30						
Size 40						
Size 40-06						
Size 50						
Size 60						

AC20C to AC40C Series

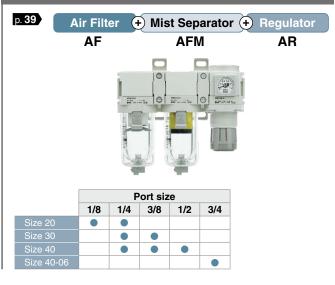
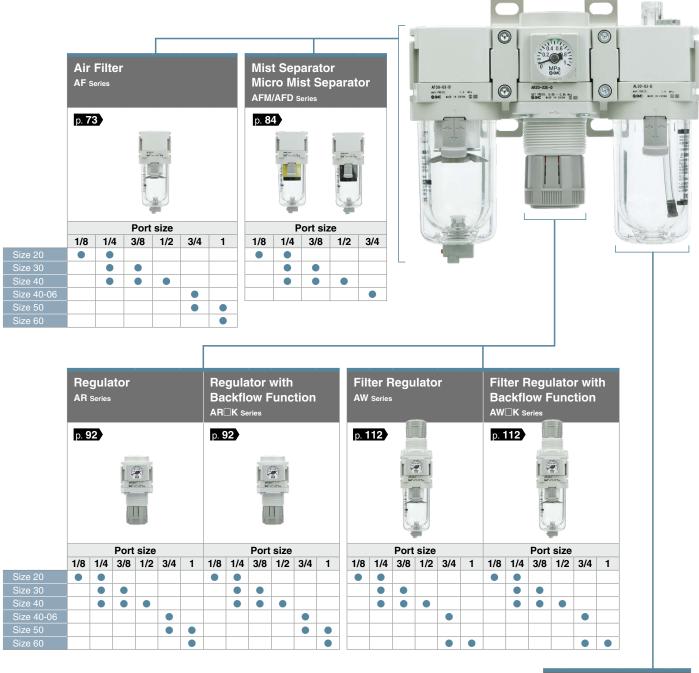


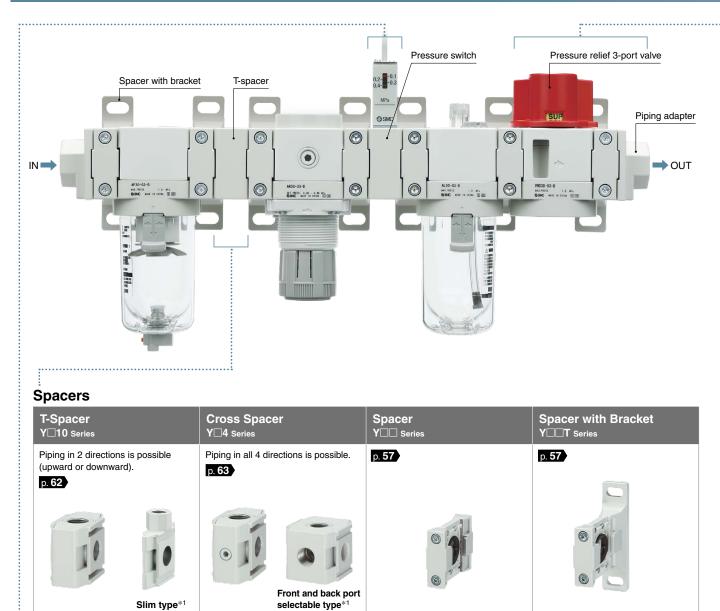
Table of Modular F.R.L. Unit Combinations for AC Assembly







Attachment List



Pressure Switches

A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.

Pressure Switch with T-Spacer IS10T _{Series}	Pressure Switch with L-Shaped Piping Adapter IS10L _{Series}	Pressure Switch IS10M _{Series}	Pressure Switch with Piping Adapter IS10E _{Series}
The OUT side piping can be branched downward. p. 65	OUT side piping: Downward p. 66	p. 64	A piping adapter allows for the installation/removal of the component without removing the piping.

 $\ast 1\,$ The mounting pitch is interchangeable with the existing attachment.

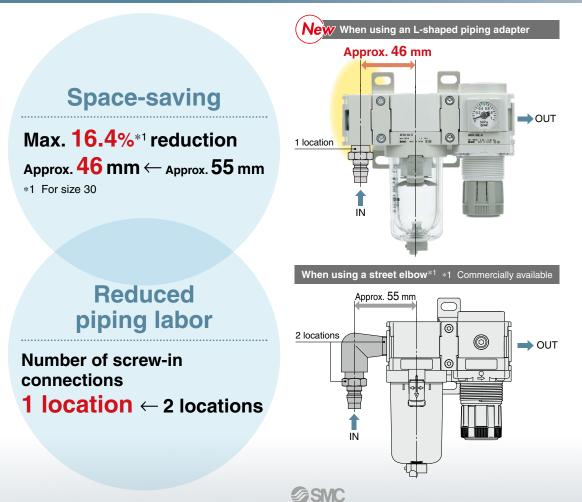
*1 The mounting pitch is interchangeable with the existing attachment.

SMC

Pressure Relief

Piping Adapters			3-Port Valve
Piping Adapter	L-Shaped Piping Adapter	T-Shaped Piping Adapter	Pressure Relief 3-Port Valve
E⊡00 _{Series}	E⊡00L _{Series}	E⊡00T _{Series}	VHS Series
A piping adapter allows for the installation/removal of the component without removing the piping.	Upward or downward piping is	Both upward and downward piping	By using a pressure relief 3-port valve,
	possible on the inlet side and the	are possible on the inlet and outlet	pressure left in the line can be easily
	outlet side of F.R.L. units.	sides of F.R.L. units.	exhausted.
	p. 60	p. 61	p. 58
Right Angle Adapter	Reducing Adapter	Cross Adapter	New End Plate
E□10T Series		Y⊡4M _{Series}	E⊟00E Series
Allows for modular connection with the product rotated 90 degrees	Allows for modular connection with products 1 body size larger or smaller	Allows for devices to be connected on the top, bottom, left, and right	For blocking the unused piping ports on sides without a modular connection
p. 68	p. 68	p. 69	p. 70

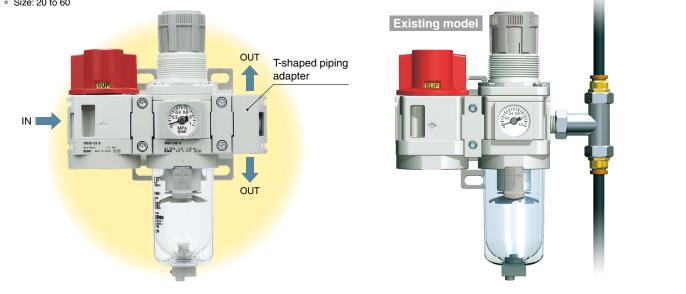
Space-saving design and reduced piping labor



Improved piping design flexibility

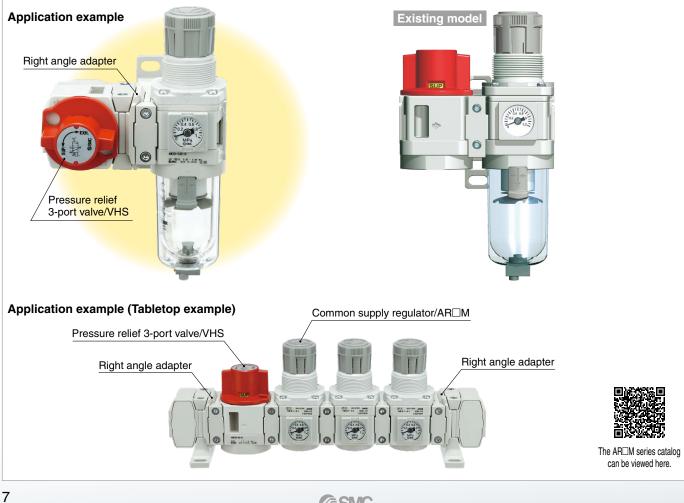
T-shaped Piping Adapter

Air can be released either upward or downward. p.61 * Size: 20 to 60



Right Angle Adapter

Modular connection with the product rotated 90 degrees is possible. p.68 * Size: 20 to 40



SMC

Right angle square type pressure gauge

The direction the pressure gauge faces can be changed freely.

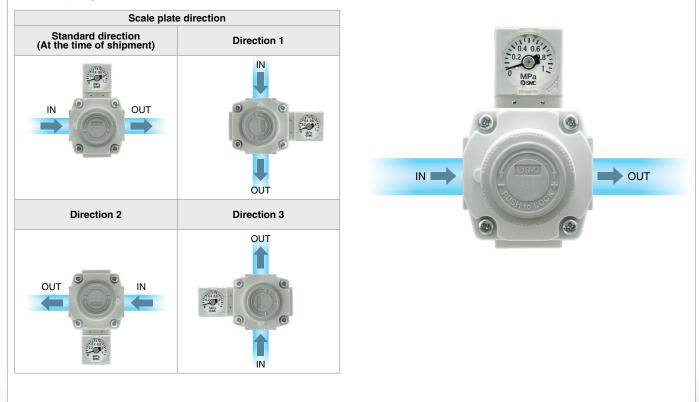
Right Angle Square Type Pressure Gauge

The direction the pressure gauge faces can be changed in 90° increments depending on where the pressure gauge needs to be viewed from.

Pressure ga	uge direction	
Standard direction (At the time of shipment)	Direction 1	
IN OUT	OUT	IN
Direction 2	Direction 3	
OUT	IN OUT	Contraction of the second seco



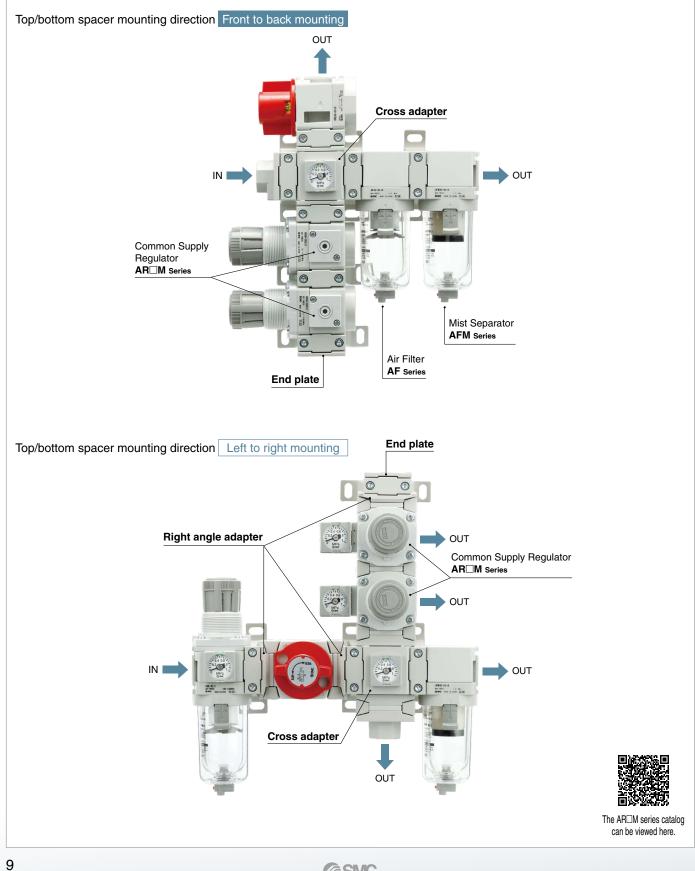
The direction the pressure gauge scale plate faces can also be changed in 90° increments depending on the piping direction.



Improved piping design flexibility

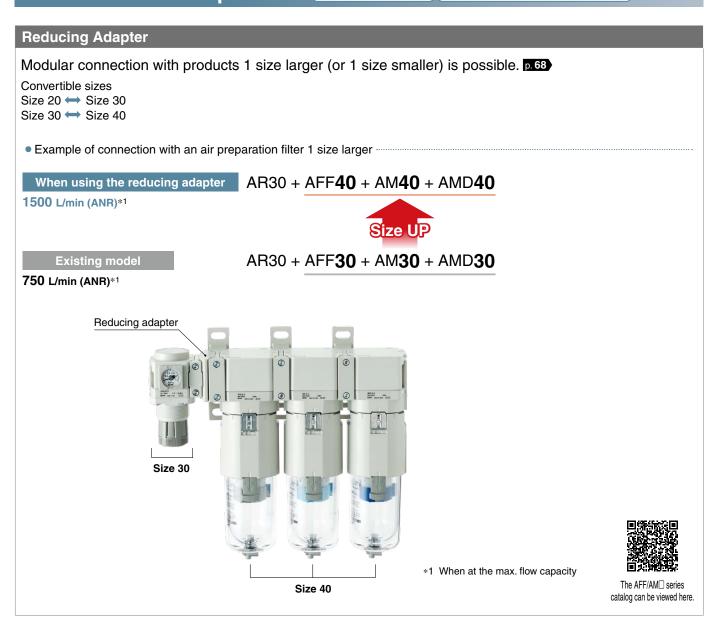
Cross Adapter

Allows for devices to be connected on the top, bottom, left, and right with the use of a spacer between the product and each device p. 69



SMC

Size conversion is possible Flow capacity UP Extended maintenance cycle



Simple Specials System

Simple Specials System

Short lead times

This system enables us to respond to your special needs (additional machining, accessory assembly, or the designing of a modular unit) and deliver your personalized products as quickly as standard products.

Repeat orders

A system designed to respond quickly and

easily to your special ordering needs

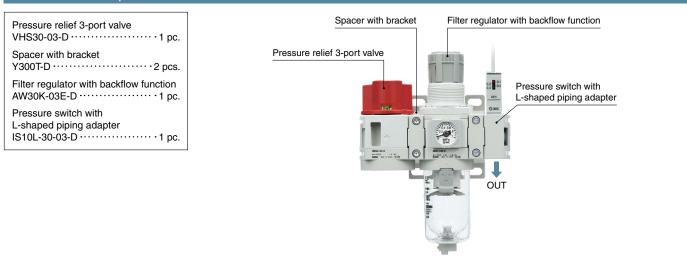
Once we receive a simple special part number from one of your previous orders, we will process the order, manufacture the product, and deliver it to you as quickly as possible.

Please contact your local sales representative for more details.

* Please contact your local sales representative for ordering procedures.

Examples of Simple Specials

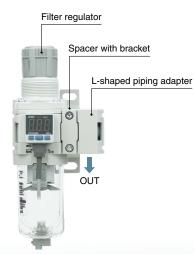
Combination example 1



Combination example 2

Filter regulator AW30-03E1-D ······1 pc.	
Spacer with bracket Y300T-D ······1 pc.	
L-shaped piping adapter E300L-03-D ······1 pc.	

* Please contact your local sales representative for ordering procedures.

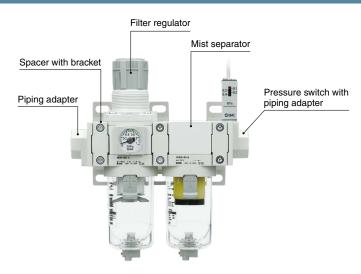


Combination example 3 $\ast~$ Please contact your local sales representative for ordering procedures. L-shaped piping adapter E300L-03-D ······1 pc. Air filter Regulator Spacer with bracket Pressure relief 3-port valve Spacer with bracket By-pass port L-shaped piping adapter Air filter AF30-03-D1 pc. 0 0 6 Regulator I AR30-03E1-D1 pc. 0 0 A730 0 Cross spacer 1 Y34-03-D1 pc. Pressure relief 3-port valve VHS30-03-D ······1 pc. IN Cross spacer By-pass port

Combination example 4

Piping adapter E300-03-D ······1 pc.
Spacer with bracket Y300T-D ····································
Filter regulator AW30-03E-D ······1 pc.
Mist separator AFM30-03-D ······1 pc.
Pressure switch with piping adapter IS10E-30-03-D ······ 1 pc.

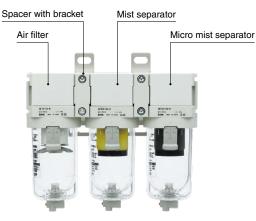
* Please contact your local sales representative for ordering procedures.



Combination example 5

Air filter AF30-03-D ·····1 pc.
Spacer with bracket Y300T-D ······2 pcs.
Mist separator AFM30-03-D ······1 pc.
Micro mist separator AFD30-03-D ······ 1 pc.

* Please contact your local sales representative for ordering procedures.



Combination example 6

Air combination AC20B-02E-D ······1 pc.
Modular mounting type 2-port solenoid valve JSXM21-AN302R-5G-U-F ······3 pcs.
Spacer with bracket Y200T-D ······1 pc.
Spacer Y200-D ······2 pcs.



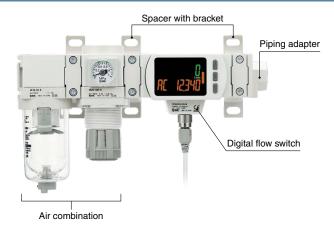
Air combination

Combination example 7

Digital flow switch PF3A701H-CS-M ······ 1 pc.
Air combination AC30B-03E-D ······ 1 pc.
Spacer with bracket Y300T-D ······2 pcs.
Piping adapter E300-03-D ······1 pc.

- Avoid mounting the lubricator on the inlet side.
 If a pressure relief 3-port valve is installed on the inlet side of the digital flow switch, causing a backflow of air, the measured value will change.

* Please contact your local sales representative for ordering procedures.

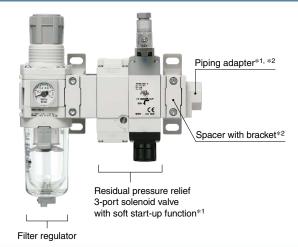


Combination example 8

Filter regulator AW30-03E-D ······ 1 pc.	
Residual pressure relief 3-port solenoid valve with soft start-up function VP546E-5DZ1-S ······1 pc.	
Spacer with bracket Y300T-D ······2 pcs.	
Piping adapter E300-03-D ······1 pc.	

- *1 Connection threads are not available for the residual pressure relief 3-port solenoid valve. Select a piping adapter.
- *2 Refer to pages 57 and 59 for details on the spacer with bracket and piping adapter.

* Please contact your local sales representative for ordering procedures.



Connectable Modular Components

Common Supply Regulator

AR M(K)-D





Mist Separator Regulator AWM-D Micro Mist Separator Regulator AWD-D





Compressed Air Preparation Filter Line Filter AFF Mist Separator AM Micro Mist Separator AMD Activated Carbon Filter AMK





OSHA Standard Compliant Pressure Relief 3-Port Valve with Locking Holes VHS -D/VHS W-D











3-Port Solenoid Valve/ Residual Pressure Release Valve with Detection of Main Valve Position VP546/746

Direct Operated/Pilot Operated 2-Port Solenoid Valve

JSX/JSX





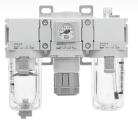
3-Color Display Digital Flow Switch PF3A7/8 H(-L)





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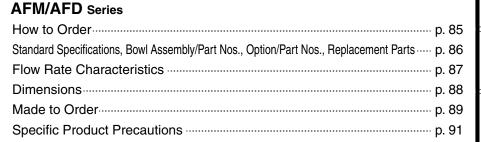




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 AFM / AFD

AB

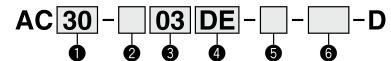
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Air Combination Air Filter + Regulator + Lubricator AC20-D to AC60-D







Option and Semi-standard Symbol Selection

- Select one each for a to j.
- · When more than one specification is required, indicate
- in alphanumeric order.
- Example) AC30-F03DE1-16NR-D

		_			0							
				Symbol	Description			Body size)			
						20	30	40	50	60		
				Nil	Rc							
2	Pipe thread type				NPT							
				F *2	G	•						
				+		L		11]		
				01	1/8		_		_	—		
				02	1/4				—	_		
6			Davitaliza	03	3/8	_			_			
0	'		Port size	04	1/2	_	_		—	—		
				06	3/4	_	_		•	—		
				10	1	_	_	—	•			
				+								
			Elect time	Nil	Without auto drain				\bullet	ullet		
		а		C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.				\bullet	\bullet		
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.				\bullet	\bullet		
				+						_		
	ę			Nil	Without pressure gauge				●	●		
	ъ		Pressure dauge*6	E	Square embedded type pressure gauge (with limit indicator)				●	•		
9	a b b c c c c c c c c c c c c c c c c c		Theodure gauge	G	Round type pressure gauge (with limit indicator)				●			
		h		М	Round type pressure gauge (with color zone)				●			
				E1	Output: NPN output, Electrical entry: Wiring bottom entry			•	●	●		
		Port size a Float type auto drain b Pressure gauge Digital pressure switch c Pressure religion d Set pressure e Bowl*8 f Air filter drain port*1	Digital pressure	E2	Output: NPN output, Electrical entry: Wiring top entry			•	●	●		
			switch	E3	Output: PNP output, Electrical entry: Wiring bottom entry			•	•			
				E4	Output: PNP output, Electrical entry: Wiring top entry				•	•		
_	1			+								
ß	hment		Pressure relief	Nil	Without attachment	•	•	•	•	•		
	Attacl	C	3-port valve	v	Mounting position: $AF + AR + AL + V$	•	•	•	•	_		
				+								
		d	Set pressure*7	Nil	0.05 to 0.85 MPa setting				●	●		
		u	Set plessure	1	0.02 to 0.2 MPa setting							
		_		+				, · ·	,			
				Nil	Polycarbonate bowl			•	●			
				2	Metal bowl				●			
		e	Bowl ^{*8}	6	Nylon bowl			•	●			
	ard		2011	8	Metal bowl with level gauge							
	and			C	With bowl guard		*9	* ⁹	*9	*9		
6	-Sti			6C	With bowl guard (Nylon bowl)		* ¹⁰	* ¹⁰	*10	*10		
	emi			+								
	Ō		A 1 (11)	Nil	With drain cock		•					
		f		J *12	Drain guide 1/8		-	-	_	_		
			drain port***	14/#12	Drain guide 1/4		•	•	•	•		
				W *13	Drain cock with barb fitting (for ø6 x ø4 nylon tube)							
				+	MPH and during an all	-	-		_			
		g	Lubricator lubricant	Nil 0*14	Without drain cock		•	•	•			
			exhaust port	3 *14	Lubricator with drain cock				•			

Air Combination AC20-D to AC60-D Series



AC

AC30-D

	_									0			AF + AR + AL					
			Syml		Descri	intion	-			Body si	70		A B					
					Dooon	ption		20	30	40		60	+					
								20	30	40	50	60	ц,					
	h	Exhaust mechani	sm Ni	Relieving type	e			•		•	•	•						
			N	Non-relieving	type			•					AL					
Semi-standard			+										+ AL					
ndå	i	Flow directior	Ni	Flow direction	n: Left to right			۲					AW					
sta 6	'	Flow direction	' R	Flow direction	n: Right to left				\bullet				◄					
j.			+										~					
Sei			Ni	Unit on produ	ct label: MPa, °C, F	Pressure gauge in S	I units: MPa	•					+ AR					
	i	Unit	Z*1			ssure gauge: MPa/p		O*17	○*17	0*17	O*17	O*17	+					
	· · ·	onit	ZA*			nit selection functio		△*18					AF					
		is NPT1/8 (applic				ge is attached, a 1.0					barb fittings							
The a fitting 2 Drain G1/4 (3 Option loose 4 When does r	auto dra (applica guide i (applica ons G au at the ti n pressi not star	(applicable to the ain port comes with able to the AC30-D is G1/8 (applicable ble to the AC30-D nd M are not assume of shipment. ure is not applied the auto drain me	h a ø3/8" to AC60-E to the AC to AC60-D embled an I, condens chanism w	One-touch type). *7 Pre 20-D) and pre b. spe d supplied *8 Rei che ate which *9 A b ill be left in (po	e. 0.4 MPa pressure g ssure can be set hig ssure in some cases, cification range. er to chemical data mical resistance of the owl guard is provide ycarbonate).	ed as standard equip	This ation the in the prov Can 1 for (with The ment unit *16 For	s produc New M vided for not be u h color z digital p selectio options:	easureme use in Jap used with N cone). Avail pressure sv n function, E1, E2, E3	erseas u ent Act. ban.) 1: Round lable by vitch will setting t s, E4	USE only active only active only active of the second seco	nit type is ure gauge special. ed with the y.	AF + AFM + AR					
ending 5 If the o less t drain N.C. t	g opera compre than 10 cock m type is re	leasing the residu tions for the day is ssor is small (0.75 10 L/min (ANR)), ay occur during the ecommended.	recommen kW, discha air leakag le start of d	ded. *11 Th urge flow is no from the *12 W operations. *13 Th *14 W	e combination of float t available. ithout a valve function the combination of metal	as standard equipment (r t type auto drain C and bowl 2 and 8 is not avai Air filter drain port, the	d D is New use ∗17 O: F lable. ∗18 ∆: S	Measu in Japar or the pi	rement Ac	t. (The S ype: NP⊺	e only accor SI unit is pr T only E3, E4.	ovided for	AW + AFM					
Stan	uarc		ations									_						
		Model		AC20-D	AC30-D	AC40-D	AC40-06-D		AC50-		AC6		Attachments					
Comm	+		[AF] [AR]	AF20-D	AF30-D AR30-D	AF40-D AR40-D	AF40-06-D		AF50- AR50-		AF6		en					
Compo	onent			AR20-D AL20-D	AL30-D	AR40-D AL40-D	AR40-06-D AL40-06-D		AL50-		AL6		Ξ					
Port size				1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	·	3/4, 1		1		넙					
		ige port size*1	[AR]	1/0, 1/4	1/4,0/0		/8		0/4, 1				tta					
Fluid	no gua		[/]				ir						Þ					
	ent and	d fluid temperat	ures*2			–5 to 60°C (
Proof						1.5	0/											
Max. c	operat	ing pressure				1.0	MPa											
Auto dra	ain min	imum N.C.	[AF]	0.1 MPa			0.15 MPa						AF					
							0.1 MPa											
			[AR]			0.05 to 0	operating pressure N.O. [AF] — 0.1 MPa											
			[AF]										AFD					
Comn						5 µ	ım											
		d air purity cla	ss*4		^		ւm 10 [6 : 4 : –]* ⁵						4					
Drain				8 cm ³	25 cm ³	5 µ	ւm 10 [6 : 4 : –]* ⁵	45 cm ³	6				~					
Drain	сарас	ity	ss*4	8 cm ³	Port size 1/4:	5 µ ISO 8573-1:20 Port size 1/4: 30 L/min (ANR)	ւm 10 [6 : 4 : –]* ⁵		3				AFM / A					
	capac Irippin	ity	ss*4	8 cm ³ 15 L/min (ANR)		5 µ ISO 8573-1:20 Port size 1/4:	ւm 10 [6 : 4 : –] ^{*5}	45 cm ³	0 L/min (,	ANR)	220 L/mir	ו (ANR)	~					
Drain Min. d	capac Irippin	ity ng flow	ss ^{*4} [AF]		Port size 1/4: 30 L/min (ANR) Port size 3/8:	5 I ISO 8573-1:20 Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2:	um 10 [6 : 4 : –]* ⁵ 50 L/min (ANF	45 cm ³	0 L/min (/	ANR)	220 L/mir	n (ANR)	AFM /					
Drain Min. d rate ^{*6} Oil ca	capac Irippin pacity	ity ng flow	ss ^{*4} [AF] [AL]	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	5 µ ISO 8573-1:20 Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR) Class 1 turbine	um 10 [6 : 4 : –]* ⁵ 50 L/min (ANI 1 oil (ISO VG32)	45 cm ³ R) 19 35 cm	0 L/min (/	ANR)	220 L/mir	n (ANR)	AFM /					
Drain Min. d rate ^{*6} Oil ca	capac Irippin pacity nmeno	ity ng flow ded lubricant	<u>ss^{*4}</u> [AF] [AL]	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	5 µ ISO 8573-1:20 Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR) Class 1 turbine	um 10 [6 : 4 : –]* ⁵ 50 L/min (ANI	45 cm ³ R) 19 35 cm	0 L/min (/	ANR)	220 L/mir	n (ANR)	AR AFM /					
Drain Min. d rate ^{*6} Oil ca Recon Bowl r Bowl g	capac Irippin pacity mmenc materi guard	ity ng flow ded lubricant ial	ss ^{*4} [AF] [AL] [AL] [AL] [AF/AL] [AF/AL]	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	5 µ ISO 8573-1:20 Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR) Class 1 turbine Polycal Stat	um 10 [6 : 4 : –]* ⁵ 50 L/min (ANI 50 I/min (ANI 0 (ISO VG32) bonate ndard (Polycart	45 cm ³ R) 19 35 cm	0 L/min (. 3	ANR)	220 L/mir	n (ANR)	AFM /					
Drain Min. d rate ^{*6} Oil ca Recon Bowl r	capac Irippin pacity mmeno materi guard tructio	ity ng flow ded lubricant ial	[AF] [AL] [AL] [AL] [AF/AL]	15 L/min (ANR) 25 cm ³	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	5 µ ISO 8573-1:20 Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR) Class 1 turbine Polycal Stat	um 10 [6 : 4 : –]* ⁵ 50 L/min (ANI 50 I/min (ANI 1 oil (ISO VG32) bonate	45 cm ³ R) 19 35 cm	0 L/min (. 3	ANR)	220 L/mir		AR AFM /					

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

*2 -5 to 50°C for the products with the digital pressure switch

*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]

Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes. For details on this standard, refer to page 131.

*5 The compressed air quality class on the inlet side is [7:4:4].

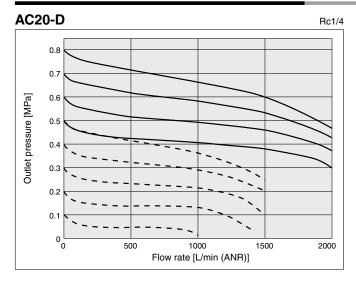
*6 • The flow rate is 5 drops or greater/min under the following conditions: Inlet pressure of 0.5 MPa; Class 1 turbine oil (ISO VG32); Temperature at 20°C; Oil adjustment valve fully open. · For a circuit that repeatedly turns ON and OFF on the outlet side, make the adjustment so that the average air consumption per minute becomes the minimum dripping flow rate or more.

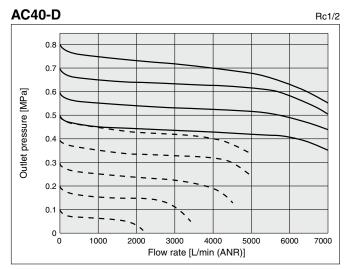


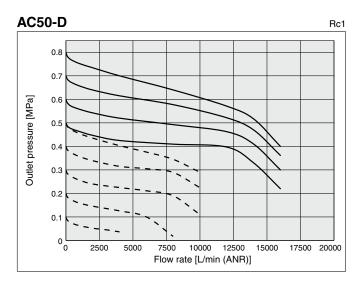
AV

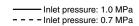
AC20-D to AC60-D Series

Flow Rate Characteristics (Representative values)

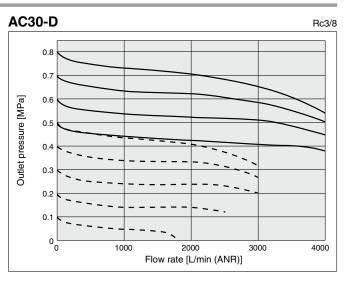




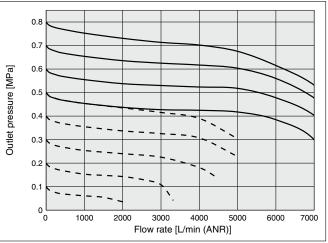


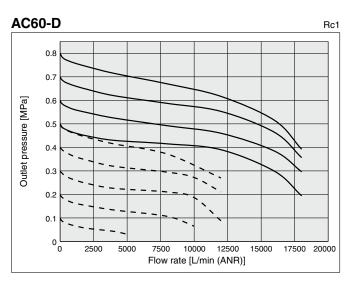


Rc3/4





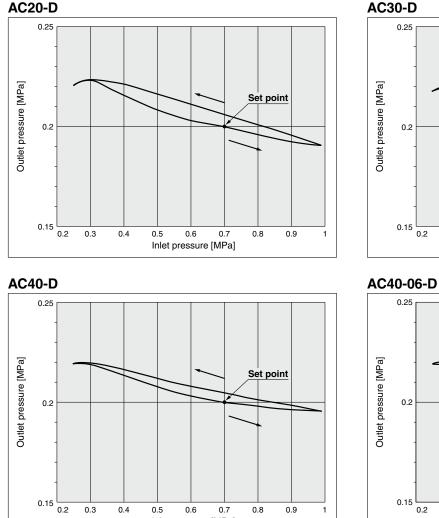




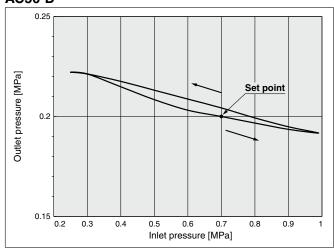
Air Combination AC20-D to AC60-D Series

Pressure Characteristics (Representative values)

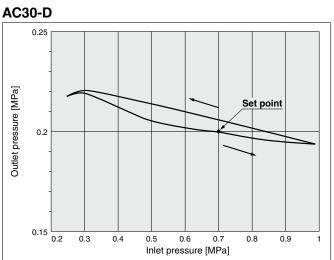
Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)



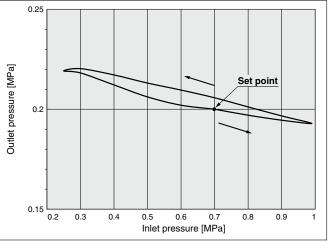




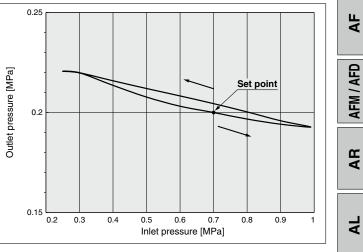
Inlet pressure [MPa]









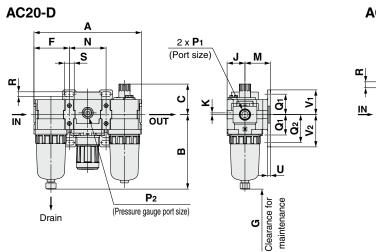


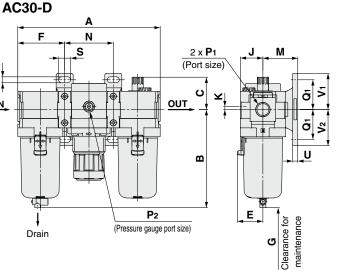


AV

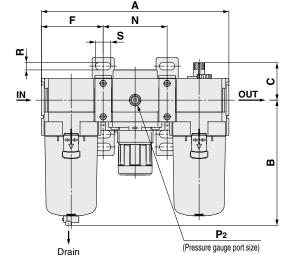
AC20-D to AC60-D Series

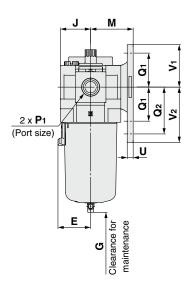
Dimensions



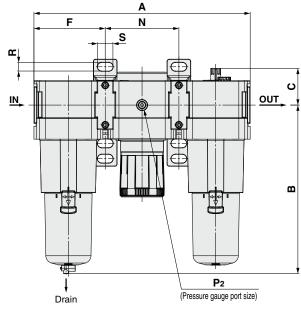


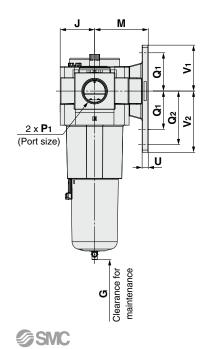
AC40-D to AC40-06-D



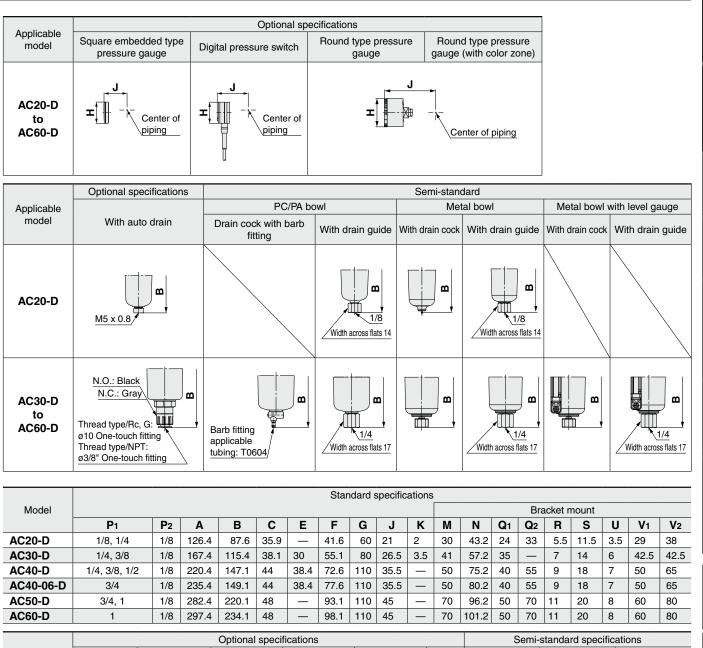


AC50-D to AC60-D





Air Combination AC20-D to AC60-D Series



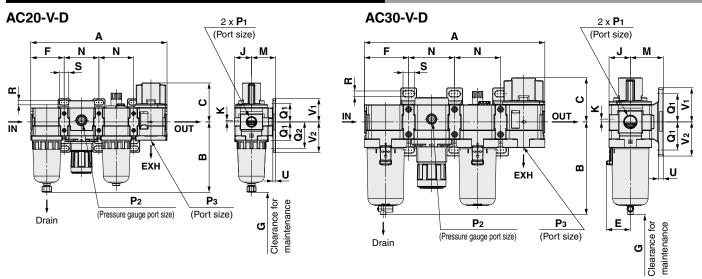
					Optiona	al speci	fications						Semi-	standard	specific	ations		
Model	Square embedded		Digital pressure		Round type		Round type pressure		Round type pressure		With	PC/PA bowl		Metal bowl		Metal bowl with level gauge		
Woder	type pr gau		swite	ch	press gau		gauge (standa		gauge color z	•	auto drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock guide		
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В	
AC20-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	—	_	
AC30-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3	
AC40-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174	
AC40-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176	
AC50-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	259.9	228.6	226.9	222.5	227	242.5	247	
AC60-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261	

AC AW + AL AF + AR + AL AF + AR AF + AFM + AR Attachments AW + AFM ЧF AFM / AFD AR

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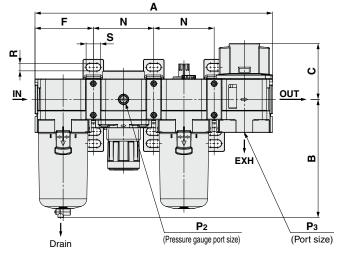
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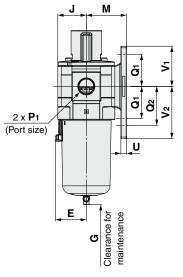
AC20-D to AC60-D Series



Dimensions: With Pressure Relief 3-Port Valve (V)

AC40-V-D to AC40-06-V-D

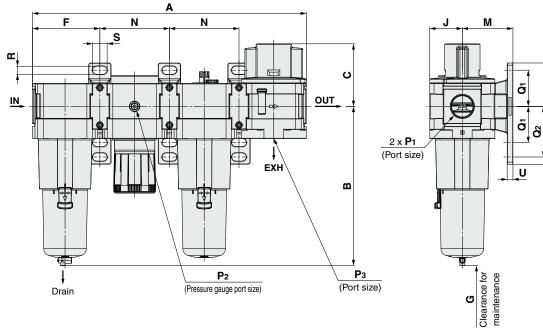




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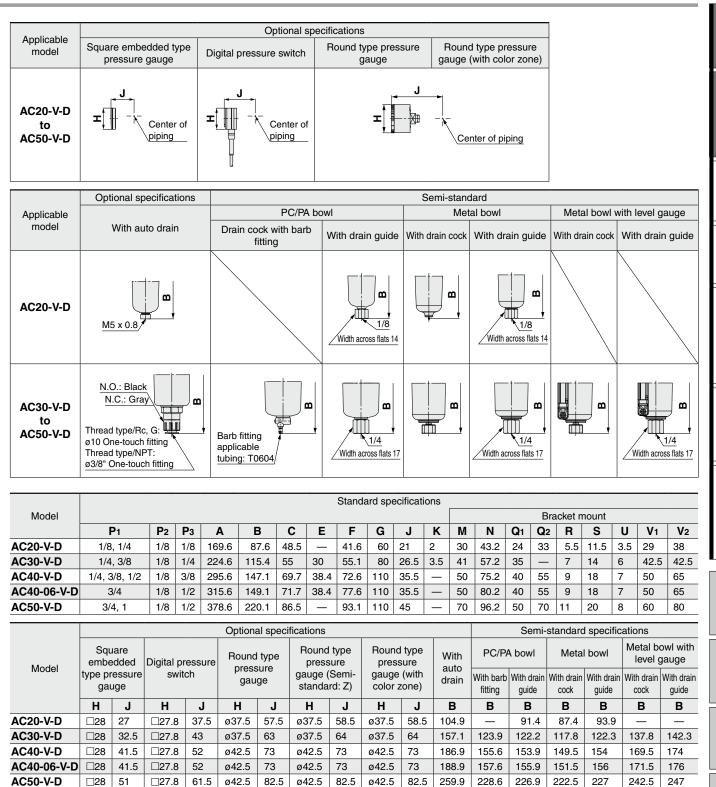
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AC50-V-D



SMC

Air Combination AC20-D to AC60-D Series



SMC

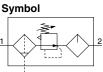
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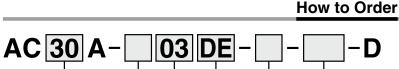
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Air Combination Filter Regulator + Lubricator AC20A-D to AC60A-D

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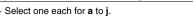




6

2

Option and Semi-standard Symbol Selection



- When more than one specification is required, indicate
- in alphanumeric order.
- Example) AC30A-F03DE1-16NR-D

								0			
				Symbol	Description			Body siz			
						20	30	40	50	60	
				Nil	Rc						
2		Pi	pe thread type	N *1	NPT	•		•	•		
				F *2	G			•	•		
				+			·				
				01	1/8		—	—	—	—	
				02	1/4				—	—	
3			Port size	03	3/8					—	
			1 011 3120	04	1/2			•	_	—	
				06	3/4			•		—	
				10	1	_	—	—			
		_	1	+						·	
			Float type	Nil	Without auto drain	•	•	•	•	•	
		а	auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.		•	•	•		
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.						
		_		+							
	ლ *_			Nil	Without pressure gauge	•	•	-	•	•	
4	tion		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)		•	-	-	•	
	0 D			G	Round type pressure gauge (with limit indicator)		•		-	•	
		b		M	Round type pressure gauge (with color zone)		•	-	-	•	
				E1	Output: NPN output, Electrical entry: Wiring bottom entry		•		-	•	
	Attachment Option*3		Digital pressure	E2	Output: NPN output, Electrical entry: Wiring top entry		•	•	•	•	
			switch	E3	Output: PNP output, Electrical entry: Wiring bottom entry		•	•	•	•	
				E4	Output: PNP output, Electrical entry: Wiring top entry		•	•	•	•	
	t			+							
	men		Pressure relief	Nil	Without attachment	•	•	40 50 \bullet	•		
5	Attach	С	3-port valve	v	Mounting position: AW + AL + \mathbf{V}	•	•	•	•	_	
			J	+				1		11	
			A	Nil	0.05 to 0.85 MPa setting						
		d	Set pressure*7	1	0.02 to 0.2 MPa setting			•	•		
				+	,						
				Nil	Polycarbonate bowl						
				2	Metal bowl				•		
			Bowl ^{*8}	6	Nylon bowl						
		е	DOWI	8	Metal bowl with level gauge	_					
	5			С	With bowl guard		*9		*9	* ⁹	
	dar			6C	With bowl guard (Nylon bowl)		*10	*10	*10	* ¹⁰	
6	Semi-standard			+							
	ni-s			Nil	With drain cock			•	•		
	Ser	f	Filter regulator	J *12	Drain guide 1/8					—	
			drain port*11		Drain guide 1/4			•	•		
				W *13	Drain cock with barb fitting (for ø6 x ø4 nylon tube)						
				+	····· · · · · · · · · · · · · · · · ·			1			
		g	Lubricator lubricant	Nil	Without drain cock	•	•	-	-	•	
		3	exhaust port	3 *14	Lubricator with drain cock						
			— ·	+	_	-	-	-	-		
		h	Exhaust	Nil	Relieving type		•	•		•	
			mechanism	N	Non-relieving type						
25	; ;				SMC						

Air Combination AC20A-D to AC60A-D Series



A A C

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

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AFM / AFD

AB

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								0		
				Body size						
						20	30	40	50	60
	5		Flow direction	Nil	Flow direction: Left to right					
	standard	•	Flow direction	R	Flow direction: Right to left		\bullet		•	
6	ano			+						
6				Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	•	•	•	•	
	Semi-	j	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	O*17	O* ¹⁷	O* ¹⁷	O*17	O*17
	0			ZA *16	Digital pressure switch: With unit selection function	△*18	△*18	△*18	△*18	△*18

- *1 Drain guide is NPT1/8 (applicable to the AC20A-D) and NPT1/4 (applicable to the AC30A-D to AC60A-D). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AC30A-D to AC60A-D).
- *2 Drain guide is G1/8 (applicable to the AC20A-D) and G1/4 (applicable to the AC30A-D to AC60A-D).
- *3 Options G and M are not assembled and supplied loose at the time of shipment.
- *4 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.
- *5 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.
- *6 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
 - *7 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
 - *8 Refer to chemical data on pages 111 and 129 for chemical resistance of the bowl.
 - *9 A bowl guard is provided as standard equipment (polycarbonate).
 - *10 A bowl guard is provided as standard equipment (nylon).
 - The combination of float type auto drain C and D is *11 not available.
- *12 Without a valve function
- *13 The combination of metal bowl 2 and 8 is not available

- *14 When choosing with W: Filter regulator drain port, the drain cock of a lubricator will be with barb fittings.
- For the pipe thread type: NPT *15
 - This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge
 - (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially. For options: E1, E2, E3, E4
- This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 △: Select with options: E1, E2, E3, E4.

Standard Specifications

	Model		AC20A-D	AC30A-D	AC40A-D	AC40A-06-D	AC50A-D	AC60A-D							
-	Filter Regulator	[AW]	AW20-D	AW30-D	AW40-D	AW40-06-D	AW60-D	AW60-D							
Component	Lubricator	[AL]	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D							
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1							
Pressure gaug	e port size*1	[AW]	1/8												
Fluid					A	lir									
Ambient and	fluid tempe	ratures*2	_5 to 60°C (No freezing) 1.5 MPa												
Proof pressu	ire														
Max. operati	••				MPa										
Auto drain minir		[AW]	0.1 MPa												
operating press		[AW]		— 0.1 MPa											
Set pressure		[AW]		0.05 to 0.85 MPa											
Nominal filtra		[AW]				um									
Compressed					ISO 8573-1:20	10 [6 : 4 : –]* ⁵									
Drain capaci	ty	[AW]	8 cm ³	25 cm ³		45	cm ³	1							
Min. dripping rate ^{*6}	g flow	[AL]	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR)	50 L/min (ANR)	190 L/min (ANR)	220 L/min (ANF							
Oil capacity		[AL]	25 cm ³	55 cm ³			cm ³								
Recommende	ed lubricant	[AL]			Class 1 turbine	oil (ISO VG32)									
Bowl materia	al	[AW/AL]													
Bowl guard		[AW/AL]	Semi-standard (Steel)			ndard (Polycarbon	ate)								
Construction	1	[AW]	Relieving type												
Weight			0.31 kg	0.58 kg	1.12 kg	1.22 kg	2.90 kg	2.97 kg							

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

*2 -5 to 50°C for the products with the digital pressure switch

*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]

Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

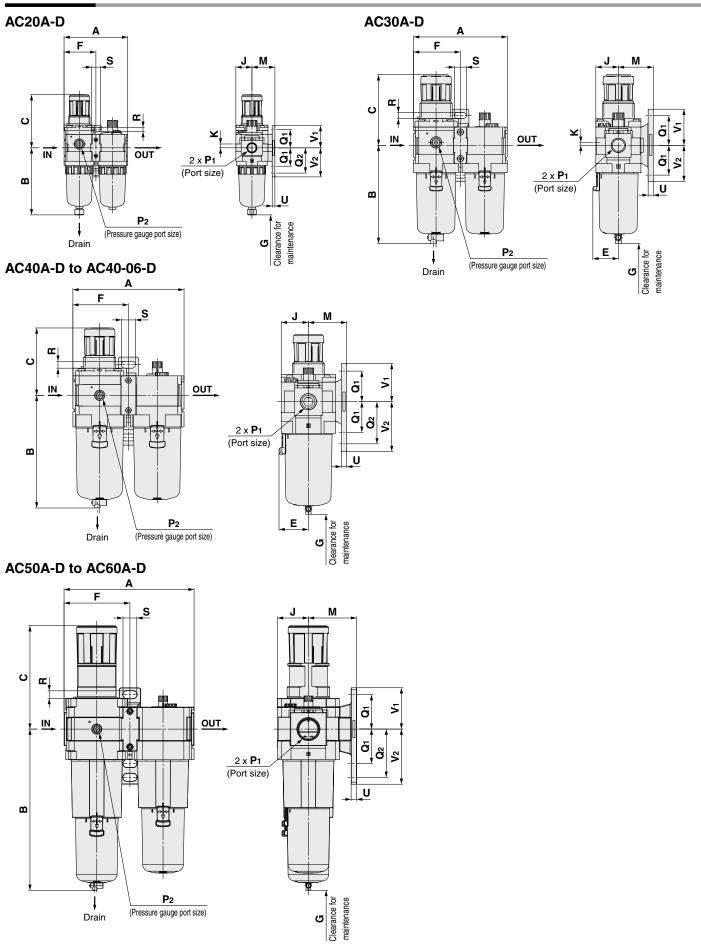
*4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air - Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131. *5 The compressed air quality class on the inlet side is [7:4:4].

 *6 • The forw rate is 5 drops or greater/min under the following conditions: Inlet pressure of 0.5 MPa; Class 1 turbine oil (ISO VG32); Temperature at 20°C; Oil adjustment valve fully open.
 • For a circuit that repeatedly turns ON and OFF on the outlet side, make the adjustment so that the average air consumption per minute becomes the minimum dripping flow rate or more.



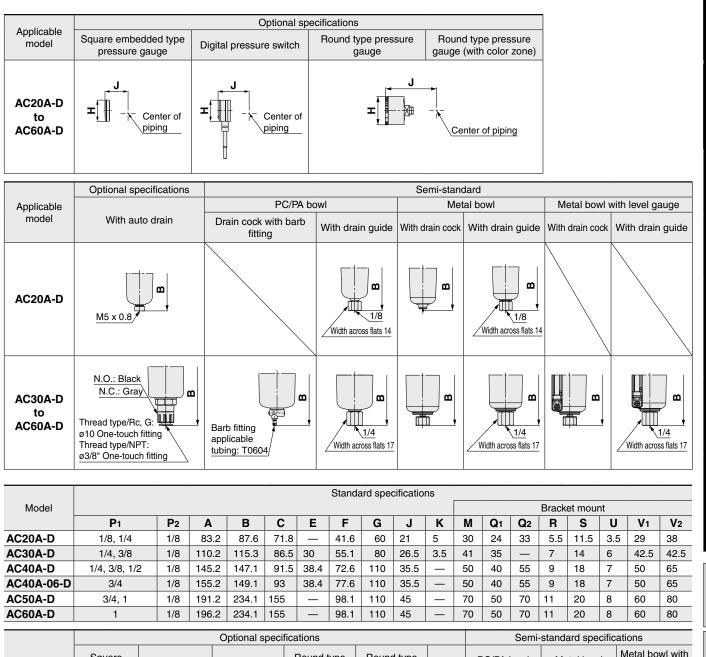
AC20A-D to AC60A-D Series



SMC

Dimensions

Air Combination AC20A-D to AC60A-D Series



					Optiona	a speci	lications						Semi-	stanuart	a specific	alions	
Model		Square embedded type pressure gauge		Digital pressure switch		Round type pressure gauge (Semi- standard: Z)				Round type pressure		PC/PA bowl		Metal bowl		Metal bowl with level gauge	
Model	1.1.1							gauge (with color zone)		auto drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	
	н	J	Н	J	н	J	н	J	Н	J	В	В	В	В	В	В	В
AC20A-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	—
AC30A-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40A-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40A-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176
AC50A-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261
AC60A-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261

AL AR AFM/AFD AF

AC

AW + AL AF + AR + AL

AF + AR

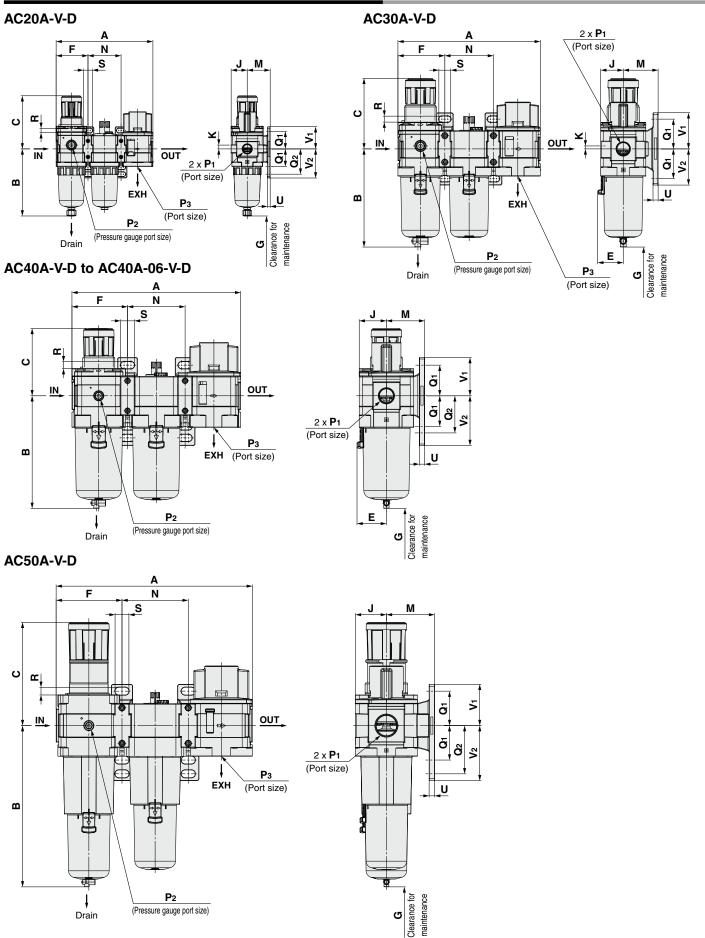
AF + AFM + AR

AW + AFM

Attachments

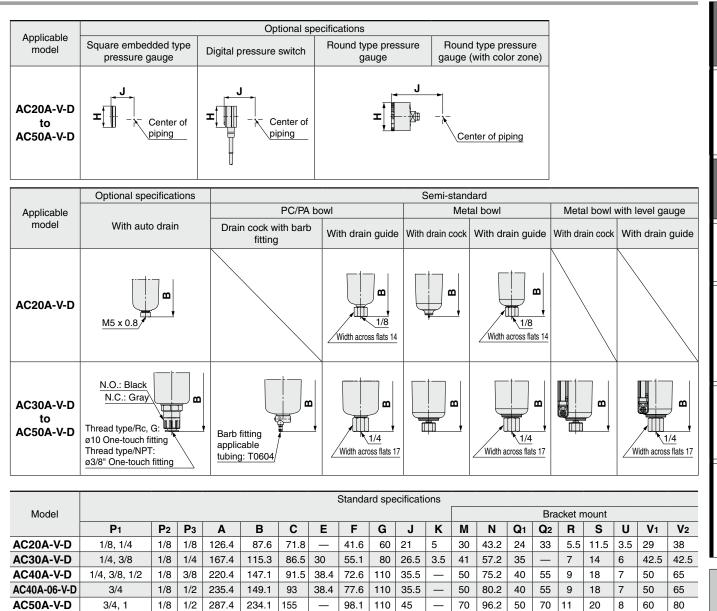
AW

AC20A-D to AC60A-D Series



Dimensions: With Pressure Relief 3-Port Valve (V)

Air Combination AC20A-D to AC60A-D Series



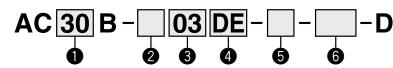
					Optiona	al speci [;]	fications						Semi-	standard	rd specifications			
Model	Squ embe		Digital pr	essure	Round		Round type Round type pressure pressure			With auto	PC/PA bowl		Metal bowl		Metal bowl with level gauge			
	type pressure gauge		swite	ch	gauge		gauge (Semi- standard: Z)		gauge (with color zone)			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В	
AC20A-V-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	_	
AC30A-V-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3	
AC40A-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174	
AC40A-06-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176	
AC50A-V-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261	

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Air Combination Air Filter + Regulator AC20B-D to AC60B-D

How to Order



Option and Semi-standard Symbol Selection

- Select one each for **a** to **i**.
- When more than one specification is required, indicate in alphanumeric order.

Example) AC30B-F03DE1-16NR-D

Symbol Description Body 20 30 4 Pipe thread type NII Rc 20 30 4 Pipe thread type NII Rc 0	50 60 • • • • • •
$ \hline \begin{tabular}{ c c c c } \hline Pipe thread type & Nil & Rc & Pire & NPT & Rc & Pire & Rescale & Rescale$	
Pipe thread type \mathbb{N}^{*1} NPTImage: Point size011/8Image: Optimized display="block">011/8Image: Optimized display="block">0101Image: Optimized display="block"01Image: Optimized display="block"01Image: Optimized display="block"01Image: Optimized display="block"01Image: Optimized display="block"01Image: Optimized display="block"I	
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	
$ \begin{tabular}{ c c c c } \hline Port size & \hline 0.3 & 3/8 & \hline - & \bullet &$	· _ _
Image: Point size 04 1/2	
$ \begin{array}{ c c c c c } \hline \begin{array}{ c c c c } \hline \begin{array}{c} \hline \end{array} \\ \hline \end{array} $ \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \\ \hline \end{array} \\ \hline \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \\ \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \\ \end{array} \\ \hline \end{array} \\ \\ \hline \end{array} \\ \\ \hline \end{array} \\ \hline \end{array} \\ \\ \\ \hline \end{array} \\ \hline \\ \\ \hline \end{array} \\ \\ \hline \end{array} \\ \\ \hline \end{array} \\ \\ \\ \hline \end{array} \\ \\ \\ \end{array} \\ \\ \\ \end{array} \\ \\ \\ \\ \hline \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \end{array} \\ \\ \\ \\)
Image: second)
$ \begin{array}{ c $	
$ \begin{tabular}{ c c c c } \hline a & Float type auto drain & \hline Nil & Without auto drain & \hline C^{*4} & N.C. (Normally closed) Drain port is closed when pressure is not applied. \\ \hline D^{*5} & N.O. (Normally open) Drain port is open when pressure is not applied. \\ \hline D^{*5} & N.O. (Normally open) Drain port is open when pressure is not applied. \\ \hline D^{*5} & N.O. (Normally open) Drain port is open when pressure is not applied. \\ \hline Pressure gauge*6 & \hline Square embedded type pressure gauge (with limit indicator) \\ \hline B & \hline Pressure gauge*6 & \hline C & Round type pressure gauge (with limit indicator) & \hline G & Round type pressure gauge (with color zone) & \hline O & \hline Digital pressure switch & \hline E2 & Output: NPN output, Electrical entry: Wiring bottom entry & \hline E2 & Output: PNP output, Electrical entry: Wiring top entry & \hline O & \hline \hline O & \hline \hline O & \hline O & \hline O & \hline \hline O & \hline O & \hline O & \hline \hline O & \hline O & \hline \hline \hline \hline$	- • •
a Float type auto drain C **4 N.C. (Normally closed) Drain port is closed when pressure is not applied. b D*5 N.O. (Normally open) Drain port is closed when pressure is not applied. + + Pressure gauge*6 E Square embedded type pressure gauge (with limit indicator) b Pressure gauge*6 E Square embedded type pressure gauge (with color zone) Digital pressure E1 Output: NPN output, Electrical entry: Wiring bottom entry E3 Output: NPN output, Electrical entry: Wiring bottom entry E4 Output: PNP output, Electrical entry: Wiring bottom entry E4 Output: PNP output, Electrical entry: Wiring bottom entry E4 Output: PNP output, Electrical entry: Wiring bottom entry E4 Output: PNP output, Electrical entry: Wiring top entry F4 * Without attachment * V Mounting position: V + AF + AR_K * * * * * * * * * * * * * * * * * * </td <td></td>	
$ \begin{array}{ c c c c } \hline a & auto drain & \hline C^{+5} & N.C. (Normally closed) Drain port is closed when pressure is not applied. \\ \hline D^{+5} & N.O. (Normally open) Drain port is open when pressure is not applied. \\ \hline \\ $	
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$ \begin{array}{ c c c c } \hline & & & & & \\ \hline & & & & \\ \hline & & & &$	
Image: Second	
$ \begin{array}{ c c c c } \hline \mathbf{M} & \mbox{Round type pressure gauge (with color zone)} \\ \hline \mathbf{M} & \mbox{Round type pressure gauge (with color zone)} \\ \hline \mathbf{M} & \mbox{Round type pressure gauge (with color zone)} \\ \hline \mathbf{E1} & \mbox{Output: NPN output, Electrical entry: Wiring bottom entry} \\ \hline \mathbf{E2} & \mbox{Output: NPN output, Electrical entry: Wiring top entry} \\ \hline \mathbf{E3} & \mbox{Output: PNP output, Electrical entry: Wiring top entry} \\ \hline \mathbf{E4} & \mbox{Output: PNP output, Electrical entry: Wiring top entry} \\ \hline \mathbf{E4} & \mbox{Output: PNP output, Electrical entry: Wiring top entry} \\ \hline \mathbf{C} & \box{Pressure relief} & \box{Nil} & \box{Without attachment} \\ \hline \mathbf{V} & \box{Mounting position: } \mathbf{AF} + \mathbf{AR} + \mathbf{V} \\ \hline \mathbf{V1}^{*7} & \box{Mounting position: } \mathbf{V} + \mathbf{AF} + \mathbf{AR} \square \mathbf{K} \\ \hline \mathbf{C} & \box{Pressure}^{*8} & \box{Nil} & \mbox{O.05 to } 0.85 \ MPa setting \\ \hline 1 & \mbox{O.02 to } 0.2 \ MPa setting \\ \hline \mathbf{H} & \box{Nil} & \box{Polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mounting polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mound}^{*9} & \box{Nil} & \box{Polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mound}^{*9} & \box{Mound} & \box{Mound} & \box{Mound} \\ \hline \mathbf{C} & \box{Mound} & \box{Mound} & \box{Mound} \\ \hline \mathbf{C} & \box{Mound} & \box{Mound} & \box{Mound} & \box{Mound} \\ \hline \mathbf{C} & \box{Mound} & M$	
$ \begin{array}{ c c c c } \hline \mathbf{M} & \mbox{Round type pressure gauge (with color zone)} \\ \hline \mathbf{M} & \mbox{Round type pressure gauge (with color zone)} \\ \hline \mathbf{M} & \mbox{Round type pressure gauge (with color zone)} \\ \hline \mathbf{E1} & \mbox{Output: NPN output, Electrical entry: Wiring bottom entry} \\ \hline \mathbf{E2} & \mbox{Output: NPN output, Electrical entry: Wiring top entry} \\ \hline \mathbf{E3} & \mbox{Output: PNP output, Electrical entry: Wiring top entry} \\ \hline \mathbf{E4} & \mbox{Output: PNP output, Electrical entry: Wiring top entry} \\ \hline \mathbf{E4} & \mbox{Output: PNP output, Electrical entry: Wiring top entry} \\ \hline \mathbf{C} & \box{Pressure relief} & \box{Nil} & \box{Without attachment} \\ \hline \mathbf{V} & \mbox{Mounting position: } \mathbf{AF} + \mathbf{AR} + \mathbf{V} \\ \hline \mathbf{V1}^{*7} & \mbox{Mounting position: } \mathbf{V} + \mathbf{AF} + \mathbf{AR} \square \mathbf{K} \\ \hline \mathbf{C} & \box{Pressure}^{*8} & \box{Nil} & \mbox{O.05 to } 0.85 \ MPa setting \\ \hline 1 & \mbox{O.02 to } 0.2 \ MPa setting \\ \hline \mathbf{H} & \box{Nil} & \box{Polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mounting polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mound}^{*9} & \box{Mound} \\ \hline \mathbf{C} & \box{Mound} & \box{Mound} \\ \hline \mathbf{C} & \box{Mound}^{*9} & \box{Mound} \\ \hline \mathbf{C} & \box{Mounting position: } \mathbf{V} + \mathbf{AF} + \mathbf{AR} \square \mathbf{K} \\ \hline \mathbf{C} & \box{Mounting position: } \mathbf{V} + \mathbf{AF} + \mathbf{AR} \square \mathbf{K} \\ \hline \mathbf{C} & \box{Mounting position: } \mathbf{V} + \mathbf{AF} + \mathbf{AR} \square \mathbf{K} \\ \hline \mathbf{C} & \box{Mounting polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mounting polycarbonate bowl} \\ \hline \mathbf{C} & \box{Mound} \\ \hline \mathbf{C} & \bx{Mound} \\ \hline \mathbf{C} & \box{Mound} \\ \hline$	
$ \begin{array}{ c c c c c } \hline b & \hline E1 & Output: NPN output, Electrical entry: Wiring bottom entry \\ \hline Digital pressure switch & E2 & Output: NPN output, Electrical entry: Wiring top entry \\ \hline E3 & Output: PNP output, Electrical entry: Wiring top entry \\ \hline E4 & Output: PNP output, Electrical entry: Wiring top entry \\ \hline E4 & Output: PNP output, Electrical entry: Wiring top entry \\ \hline + \\ \hline \hline V & Mounting position: AF + AR + V \\ \hline V1^{*7} & Mounting position: V + AF + AR \Box K \\ \hline & \bullet & \bullet \\ \hline & \bullet$	
Digital pressure switch E2 Output: NPN output, Electrical entry: Wiring top entry E3 Output: PNP output, Electrical entry: Wiring bottom entry E4 Output: PNP output, Electrical entry: Wiring top entry + Pressure relief 3-port valve V Mounting position: AF + AR + V V1*7 Mounting position: V + AF + AR□K + d Set pressure*8 1 0.02 to 0.2 MPa setting + Nil Polycarbonate bowl 2 Metal bowl 6 Nylon bowl	
$ \begin{array}{ c c c c c c c } \hline Switch & \hline E3 & Output: PNP output, Electrical entry: Wiring bottom entry \\ \hline E4 & Output: PNP output, Electrical entry: Wiring top entry \\ + \\ \hline & \\ \hline \hline & \\ \hline \\ \hline$	
$\begin{tabular}{ c c c c c } \hline E4 & Output: PNP output, Electrical entry: Wiring top entry & + & & & & & & & & & & & & & & & & & $	
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d Set pressure*8 Nil 0.05 to 0.85 MPa setting Image: Constraint of the setting Image: Co	, • •
d Set pressure** Nil 0.05 to 0.85 MPa setting Image: Constraint of the setting Image: Co	· • —
d Set pressure*8 Nil 0.05 to 0.85 MPa setting • • I 0.02 to 0.2 MPa setting •	$\bullet \mid \bullet \mid - \mid$
a Set pressure*** 1 0.02 to 0.2 MPa setting + + Nil Polycarbonate bowl 2 Metal bowl 6 Nylon bowl	
Nil Polycarbonate bowl Image: Constraint of the sector of	
Nil Polycarbonate bowl 2 Metal bowl 6 Nylon bowl	
2 Metal bowl 6 Nylon bowl	
Bowl ^{*9} 6 Nylon bowl ● ●	
2 2 4 Metal bowl with level gauge 0 − 0	
C With bowl guard • -*10	
Image: Book of the second s	11 _*11 _*11
Image: Solution of the second seco	
Air Eller derice Deric mide 4/0	
f Air filter drain J^{*13} Drain guide 1/8 $-$	
port*12 Drain guide $1/4$ — •	
W*14 Drain cock with barb fitting (for ø6 x ø4 nylon tube) ●	
+	
g Exhaust Nil Relieving type • •	
9 mechanism N Non-relieving type	

Air Combination AC20B-D to AC60B-D Series



AC

AW + AL || AF + AR + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

ЧF

AFM / AFD

A R

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AC30B-D

	/	<u> </u>		Symbol	Description	Body size							
						20	30	40	50	60			
	5	h	Elow direction	Nil	Flow direction: Left to right					●			
	tandard	h	Flow direction	R	Flow direction: Right to left								
6	anc			+									
6	ပု			Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	•		•	•				
	Semi	i	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	O*17	0*17	O* ¹⁷	O*17	0*17			
	0,			ZA *16	Digital pressure switch: With unit selection function	△*18	△*18	△*18	△*18	\triangle^{*18}			
*1 Drain guide is NPT1/8 (applicable to the AC20B-D) type. 0.4 MPa pressure gauge for 0.2 MPa type. and NPT1/4 (applicable to the AC20B D) *7 The required with a headflow function in *15 For the pipe thread type.													

- and NPT1/4 (applicable to the AC30B-D to AC60B-D). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AC30B-D to AC60B-D).
- *2 Drain guide is G1/8 (applicable to the AC20B-D) and G1/4 (applicable to the AC30B-D to AC60B-D).
 *3 Options G and M are not assembled and supplied
- loose at the time of shipment.
 *4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Beleasing the residual condensate before.
- the bowl. Releasing the residual condensate before ending operations for the day is recommended.
 *5 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.
- *6 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa)
- type. 0.4 MPa pressure gauge for 0.2 MPa type.
 *7 The regulator is equipped with a backflow function in this configuration. Additionally, when performing maintenance work, make sure that the outlet pressure is released to atmospheric pressure using a pressure
- gauge.*8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- *9 Refer to chemical data on page 83 for chemical resistance of the bowl.
- *10 A bowl guard is provided as standard equipment (polycarbonate).
- *11 A bowl guard is provided as standard equipment (nylon).
- *12 The combination of float type auto drain C and D is not available.
- *13 Without a valve function

*15 For the 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.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the

unit selection function, setting to psi initially. *16 For options: E1, E2, E3, E4

- This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 \triangle : Select with options: E1, E2, E3, E4.

Standard Specifications

	Мо	odel		AC20B-D	AC30B-D	AC40B-D	AC40B-06-D	AC50B-D	AC60B-D				
Component	Air Filt	er	[AF]	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D				
Component	Regula	tor	[AR]	AR20-D	AR30-D	AR40-D	AR40-06-D	AR50-D	AR60-D				
Port size				1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1				
Pressure gau	ge port s	size ^{*1}	[AR]	1/8									
Fluid				Air									
Ambient and	fluid tem	nperatures*2				–5 to 60°C	(No freezing)						
Proof pressur	e			1.5 MPa									
Max. operatin	g pressi	ure		1.0 MPa									
Auto drain mi	nimum	N.C.	[AF]	0.1 MPa	0.1 MPa 0.15 MPa								
operating pre	ssure	N.O.	[AF]	— 0.1 MPa									
Set pressure	range		[AR]	0.05 to 0.85 MPa									
Nominal filtra	tion rati	ng* ³	[AF]	5 µm									
Compressed	air purit	y class ^{*4}		ISO 8573-1:2010 [6 : 4 : 4]*5									
Drain capacity	у		[AF]	8 cm ³ 25 cm ³ 45 cm ³									
Bowl material			[AF]			Polyca	rbonate						
Bowl guard			[AF]	Semi-standard (Steel) Standard (Polycarbonate)									
Construction			[AR]	Relieving type									
Weight				0.25 kg	0.51 kg	0.95 kg	1.02 kg	2.20 kg	2.39 kg				

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

*2 -5 to 50°C for the products with the digital pressure switch

*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]

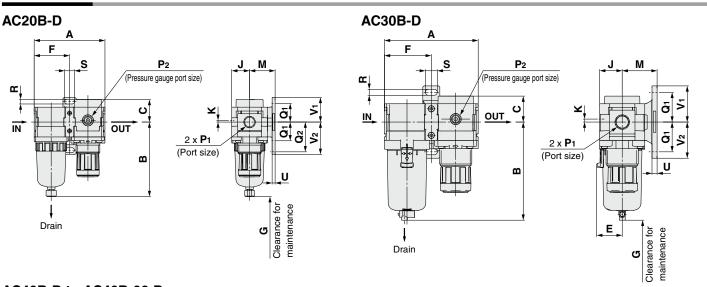
Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable *4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131.

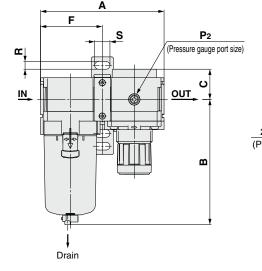
*5 The compressed air quality class on the inlet side is [7:4:4].

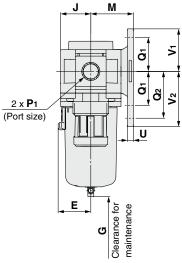
AC20B-D to AC60B-D Series



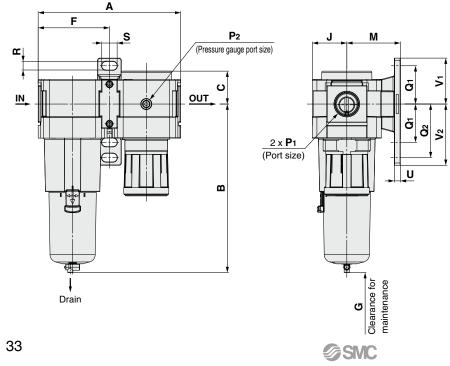




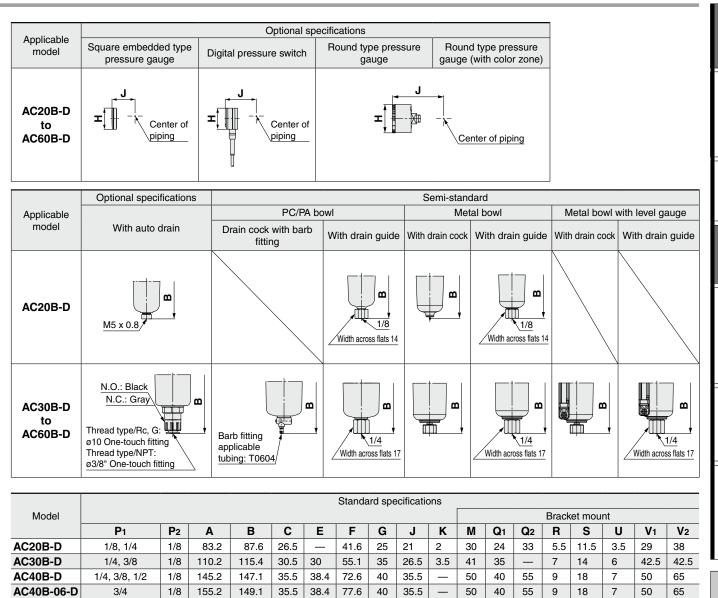




AC50B-D to AC60B-D



Air Combination AC20B-D to AC60B-D Series



AC50B-D	3	/4, 1	1/8	186.2	220.	1 43	—	93.1	30	45	_	70 50	70	11 2	20 8	60	80
AC60B-D		1	1/8	196.2	2 234.	1 45		98.1	30	45	_	70 50) 70	11 2	20 8	60	80
		Optional specifications Semi-standard specifications															
Model		Square embedded Digital pressure			Round		Round		Round type pressure		With	PC/	PC/PA bowl		Metal bowl		owl with gauge
Model	type pressure gauge		swit	ch	press gau		gauge standa	•	0 0	e (with zone)	auto drain	With ba fitting			n With drair guide	With drain cock	With drain guide
	Н	J	Н	J	н	J	н	J	н	J	В	В	В	В	В	В	В
AC20B-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	—	—
AC30B-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40B-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	ø42.5 73		155.6	153.9	149.5	154	169.5	174
AC40B-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176
AC50B-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	259.9	228.6	226.9	222.5	227	242.5	247

82.5

ø42.5

82.5

AC60B-D

□28

51

□27.8

61.5

ø42.5

82.5

ø42.5

273.9

242.6

240.9

236.5

241

256.5

261

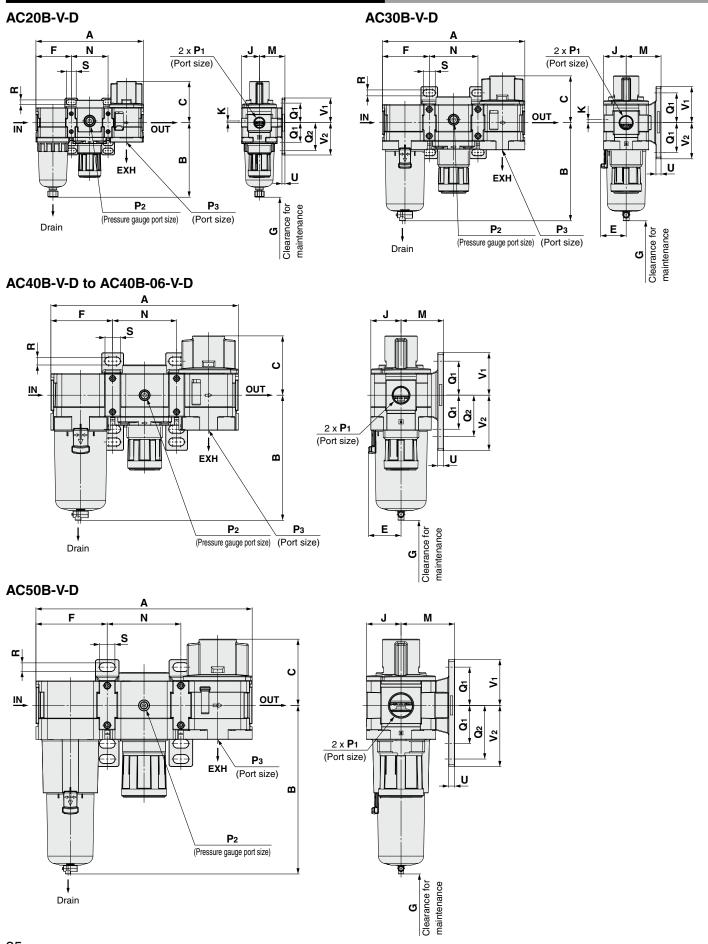
AC AW + AL AF + AR + AL AF + AR AF + AFM + ARAttachments AW + AFM AF AFM / AFD

₹

A

AR

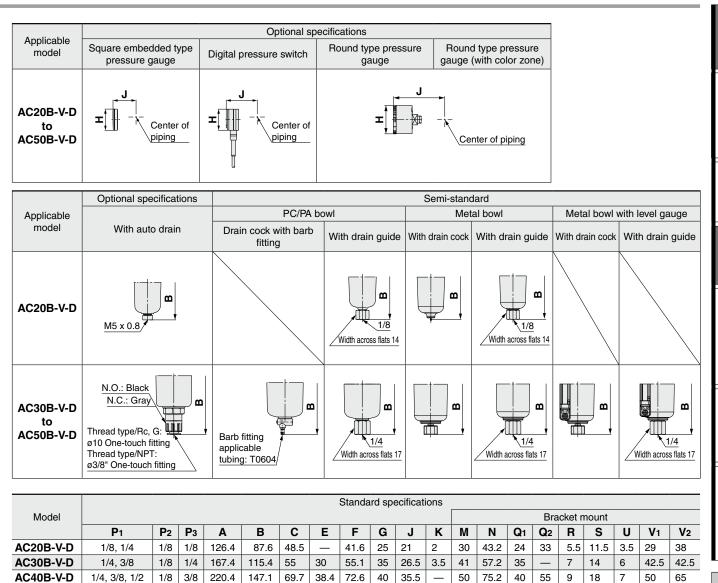
AC20B-D to AC60B-D Series



SMC

Dimensions: With Pressure Relief 3-Port Valve (V)

Air Combination AC20B-D to AC60B-D Series



									-	-							-	-		
AC50B-V-D	3/-	4, 1	1/8	1/2	282.4	220.1	86.5	5 —	93.1	30	45	_	70	96.2	50	70	11	20	3 60	80
					O	otional s	pecific	ations		·					Sei	ni-st	andard	d specific	ations	
Madal	Squ embe		Digital	press	ure	ound typ	pe	Round pressi	. 1		d type ssure		/ith uto	PC/P/	A bowl		Meta	l bowl	1	owl with gauge
Model	type pr gau		sw	/itch		pressure gauge	g	jauge (S standar			e (with zone)			With barb fitting	With dr guide		lith drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	J	H	J	Н	J	Н	J	E	В	В	В		В	В	В	В
AC20B-V-D	□28	27	□27.8	3 37	.5 ø3	37.5 5	7.5 🧔	37.5	58.5	ø37.5	58.5	10	4.9	_	91.	4	87.4	93.9	_	—
AC30B-V-D	□28	32.5	□27.8	3 43	ø3	87.5 6	3 🤉	37.5	64	ø37.5	64	15	7.1	123.9	122.	2	117.8	122.3	137.8	142.3
AC40B-V-D	□28	41.5	□27.8	3 52	. ø4	2.5 7	3 🧔	942.5	73	ø42.5	73	18	6.9	155.6	153.	9 ·	149.5	154	169.5	174
AC40B-06-V-D	□28	41.5	□27.8	3 52	. ø4	2.5 7	3 @	942.5	73	ø42.5	73	18	8.9	157.6	155.	9 .	151.5	156	171.5	176
AC50B-V-D	□28	51	□27.8	3 61	.5 ø4	2.5 8	2.5 0	942.5	82.5	ø42.5	82.5	25	9.9	228.6	226.	9 2	222.5	227	242.5	247

SMC

40

77.6

35.5

50

_

80.2

40 55 9 18

38.4

71.7

AC40B-06-V-D

3/4

1/8 1/2

235.4

149.1

AW + AL AF + AR + AL AF + AR AF + AFM + AR Attachments || AW + AFM ЧF AFM / AFD AR

AC

AV

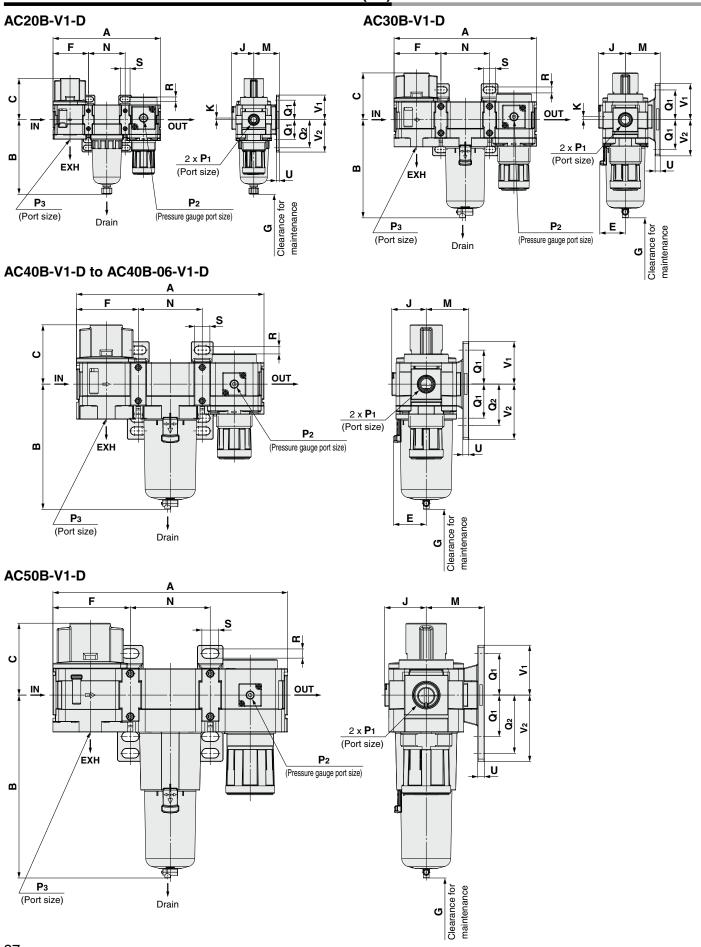
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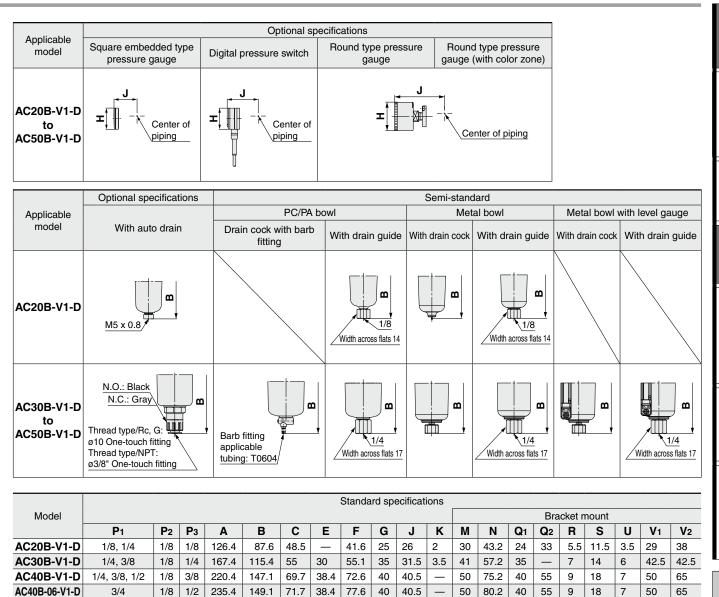
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AC20B-D to AC60B-D Series



Dimensions: With Pressure Relief 3-Port Valve (V1)

Air Combination AC20B-D to AC60B-D Series



AC50B-V1-D	3/-	4, 1	1/8	1/2 28	32.4 22	20.1	86.5	—	93.1	30	50	—	70	96.2	50 7	0 11	20	8	60	80
					Option	al spec	cificati	ons							Sem	-stand	ard spec	ificati	ons	
Madal	Squ embe		Digital p	ressure	Roun			ound ty pressu			d type sure		/ith uto	PC/PA	bowl	Me	tal bow		etal bo level g	owl with gauge
Model	type pr gau		swi	tch	gai			ige (Se andard			e (with zone)			With barb fitting	With drain guide	With dr	ain With d guio		th drain cock	With drain guide
	Н	J	Н	J	н	J	H	1	J	н	J		в	В	В	В	B		В	В
AC20B-V1-D	□28	27	□27.8	37.5	ø37.5	62.5	ø37	7.5 (63.5	ø37.5	63.5	10	4.9	_	91.4	87.	4 93	.9	—	_
AC30B-V1-D	□28	32.5	□27.8	43	ø37.5	68	ø37	7.5 (69	ø37.5	69	15	7.1	123.9	122.2	117.	8 122	.3 1	37.8	142.3
AC40B-V1-D	□28	41.5	□27.8	52	ø42.5	78	ø42	2.5	78	ø42.5	78	18	6.9	155.6	153.9	149.	5 154	1	69.5	174
AC40B-06-V1-D	□28	41.5	□27.8	52	ø42.5	73	ø42	2.5	73	ø42.5	73	18	8.9	157.6	155.9	151.	5 156	1	71.5	176
AC50B-V1-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42	2.5	82.5	ø42.5	82.5	25	9.9	228.6	226.9	222.	5 227	2	42.5	247

AR

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A₹

Air Combination Air Filter + Mist Separator + Regulator AC20C-D to AC40C-D





Option and Semi-standard Symbol Selection



6

6

· Select one each for **a** to **i**.

When more than one specification is required, indicate

in alphanumeric order.

Example) AC30C-F03DE1-16NR-D

	<u> </u>	<u> </u>					Û	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc	•		
2		Р	Pipe thread type	N *1	NPT	•	•	•
				F *2	G	•		
				+				
				01	1/8	•	_	_
				02	1/4	•	•	•
6			Port size	03	3/8	_	•	•
				04	1/2	_	_	•
				06	3/4	_	_	•
				+				
			Float turns	Nil	Without auto drain	●		
		а	Float type auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•		
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.	_		•
				+				
	ő			Nil	Without pressure gauge	•		•
4	Option ^{*3}		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)	•		
T	Dpti		i lessure gauge	G	Round type pressure gauge (with limit indicator)	•		•
		b		M	Round type pressure gauge (with color zone)	•		•
				E1	Output: NPN output, Electrical entry: Wiring bottom entry	•		
			Digital pressure	E2	Output: NPN output, Electrical entry: Wiring top entry	•		•
			switch	E3	Output: PNP output, Electrical entry: Wiring bottom entry	•		•
				E4	Output: PNP output, Electrical entry: Wiring top entry	•		
		_		+			1	1
	nent		Dragoving valief	Nil	Without attachment	•	•	•
6	Attachment	c	Pressure relief 3-port valve	V	Mounting position: AF + AFM + AR + V	•	•	•
	Att			V1*7	Mounting position: $\mathbf{V} + AF + AFM + AR\Box K$	•		•
				+				
		d	Set pressure*8	Nil	0.05 to 0.85 MPa setting	•		•
		<u> </u>		1	0.02 to 0.2 MPa setting	•		
		_		+			1	1
				Nil	Polycarbonate bowl	•		
				2	Metal bowl	•		•
		е	Bowl*9	6	Nylon bowl	•		•
	laro			8	Metal bowl with level gauge	_	×10	*10
	and			C	With bowl guard	•	*10	
6	Semi-standard			6C	With bowl guard (Nylon bowl)	•	*11	*11
	em			+	With drain pools	-		
	0		Air filter	Nil	With drain cock	•		-
		f	Mist separator	J *13	Drain guide 1/8 Drain guide 1/4	•	-	-
			drain port*12	W *14		_	•	•
				+ vv	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_		
				+ Nil	Relieving type	•		
		g	Exhaust mechanism	NII	Non-relieving type	•		
				IN		-	-	-

AC 30 C -

03 DE

2

Air Combination AC20C-D to AC40C-D Series



AC

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

ЧF

AFM / AFD

A R

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AC30C-D

	<u> </u>	_		Symbol	Description	20	1 Body size 30	40
				Nil	Flow direction: Left to right		•	
	standard	h	Flow direction	R	Flow direction: Right to left	•	•	
6	and			+				
U	li-St			Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa		•	
	emi-	i	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	O*17	O*17	O*17
	S			ZA *16	Digital pressure switch: With unit selection function	△*18	\triangle^{*18}	△*18
a T	and Ni The a	PT1/4 uto dr	is NPT1/8 (applicable to (applicable to the AC30C rain port comes with a g	-D to AC40 3/8" One-t	C-D). pressure gauge will be fitted for standard (0.85 MPa) *14 The com- ouch type. 0.4 MPa pressure gauge for 0.2 MPa type. *15 For the	pipe thread typ	al bowl 2 and 8 e: NPT	is not available.

- fitting (applicable to the AC30C-D to AC40C-D). *2 Drain guide is G1/8 (applicable to the AC20C-D) and G1/4 (applicable to the AC30C-D to AC40C-D).
- *3 Options G and M are not assembled and supplied loose at the time of shipment.
- *4 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.
- *5 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 The regulator is equipped with a backflow function in this
- configuration. Additionally, when performing maintenance work, make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- *8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the , specification range.
- *9 Refer to chemical data on pages 83 and 91 for chemical resistance of the bowl.
- *10 A bowl guard is provided as standard equipment (polycarbonate).
- *11 A bowl guard is provided as standard equipment (nylon). *12 The combination of float type auto drain C and D is not available.
- This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.

- *16 For options: E1, E2, E3, E4 This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 △: Select with options: E1, E2, E3, E4.

Standard Specifications

	Model		AC20C-D	AC30C-D	AC40C-D	AC40C-06-D
	Air Filter	[AF]	AF20-D	AF30-D	AF40-D	AF40-06-D
Component	Mist Separate	or [AFM]	AFM20-D	AFM30-D	AFM40-D	AFM40-06-D
	Regulator	[AR]	AR20-D	AR30-D	AR40-D	AR40-06-D
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gau	ge port size*1	[AR]		1,	/8	
Fluid				A	ir	
Ambient and f	luid temperatu	res*2		−5 to 60°C (No freezing)	
Proof pressu	re			1.5	MPa	
Max. operatin	g pressure			1.0	MPa	
Auto drain mi	nimum N.C.	[AF/AFM]	0.1 MPa		0.15 MPa	
operating pre	ssure N.O.	[AF/AFM]	_		0.1 MPa	
Set pressure	range	[AR]		0.05 to 0).85 MPa	
Max. flow cap	acity*3	[AFM]	200 L/min (ANR)	450 L/min (ANR)	1100 L/r	min (ANR)
Nominal filtra	tion roting*4	[AF]		5 µ	um	
Nominal filtra	tion rating	[AFM]		0.3 µm (99.9% filt	ered particle size)	
Outlet side oil m	ist concentration	* ^{5, *6} [AFM]		Max. 1.0 mg/r	n³ (≈ 0.8 ppm)	
Compressed	air purity class	*7		ISO 8573-1:20	10 [3 : 4 : 3]*8	
Drain capacit	у	[AF/AFM]	8 cm ³	25 cm ³	45	cm ³
Bowl materia		[AF/AFM]		Polyca	rbonate	
Bowl guard		[AF/AFM]	Semi-standard (Steel)	ç	Standard (Polycarbonate	e)
Construction		[AR]		Relievi	ng type	
Weight			0.38 kg	0.75 kg	1.42 kg	1.54 kg

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

*2 -5 to 50°C for the products with the digital pressure switch

Mist separator inlet pressure: 0.7 MPa. Flow at 20°C, atmospheric pressure, and 65% of the relative humidity *3 The maximum flow capacity varies depending on the inlet pressure

Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side. *4 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above

Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*5 The outlet side oil mist concentration for the following conditions in accordance with [Test condition: ISO 8573-2:2007, Test method ISO 12500-1:2007 compliant] in addition to the conditions above

Conditions: When a new element is used, the oil mist concentration on the filter inlet side is 10 mg/m³, and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable *6 The bowl seal and other O-rings are slightly lubricated.
*7 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

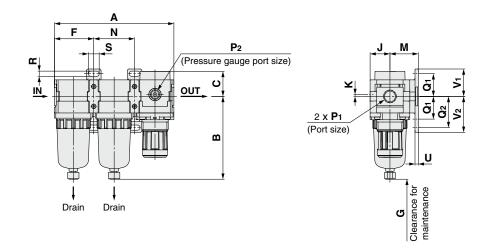
For details on this standard, refer to page 131. *8 The compressed air quality class on the inlet side is [7:4:4].



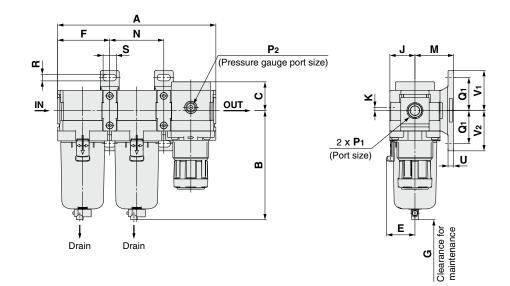
AC20C-D to AC40C-D Series

Dimensions

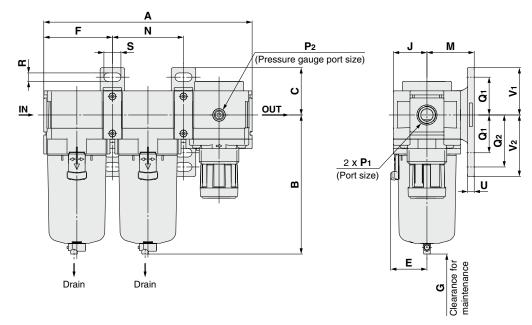
AC20C-D



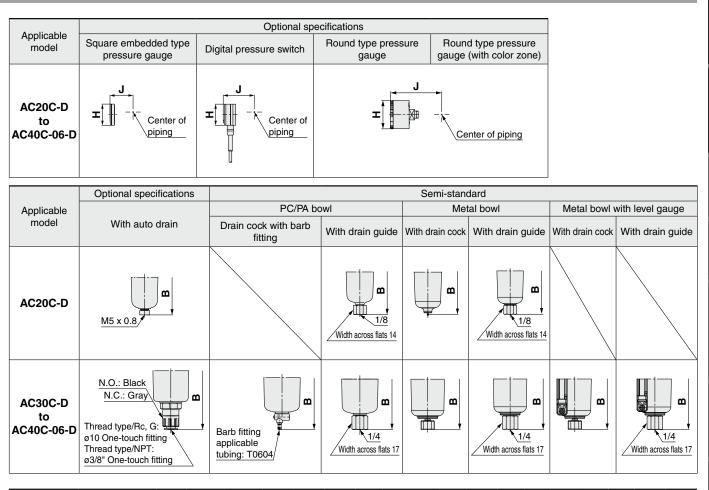
AC30C-D



AC40C-D to AC40C-06-D



Air Combination AC20C-D to AC40C-D Series



							Stan	dard s	specific	ations									
Model														Bra	acket r	nount			
	P 1	P2	Α	В	С	Е	F	G	J	Κ	Μ	Ν	Q 1	Q 2	R	S	U	V 1	V2
AC20C-D	1/8, 1/4	1/8	126.4	87.6	26.5	_	41.6	45	21	2	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30C-D	1/4, 3/8	1/8	167.4	115.4	30.5	30	55.1	50	26.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40C-D	1/4, 3/8, 1/2	1/8	220.4	147.1	35.5	38.4	72.6	75	35.5	—	50	75.2	40	55	9	18	7	50	65
AC40C-06-D	3/4	1/8	235.4	149.1	35.5	38.4	77.6	75	35.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standarc	l specific	ations	
Model	Squ embe		Digital pr	essure	Round		Round press		Round press	•••	With auto	PC/P4	A bowl	Meta	l bowl		owl with gauge
Moder	type pr gau		swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20C-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	_
AC30C-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40C-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40C-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

 AFM / AFD
 AF
 Attachments
 AW + AFM
 AF + AFM + AR
 AF + AR

AC

AW + AL AF + AR + AL

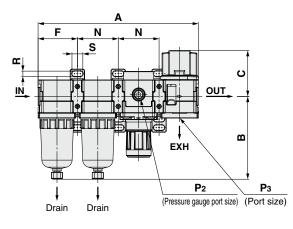
AV

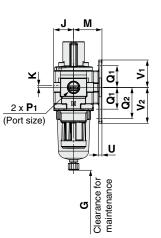
AL

AC20C-D to AC40C-D Series

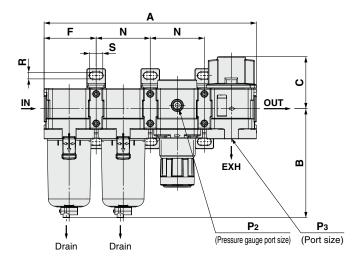
Dimensions: With Pressure Relief 3-Port Valve (V)

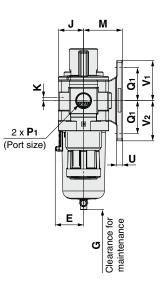
AC20C-V-D



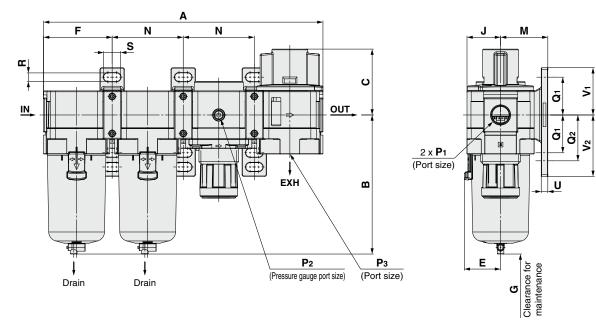


AC30C-V-D

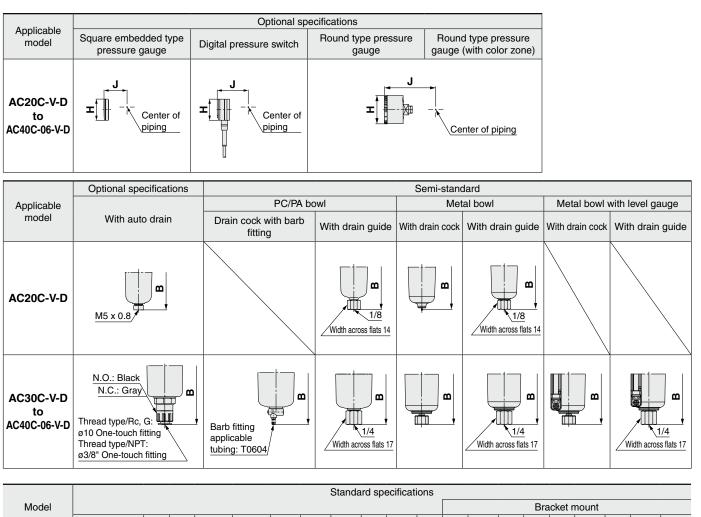




AC40C-V-D to AC40C-06-V-D



Air Combination AC20C-D to AC40C-D Series



Model															Bra	icket r	nount			
	P 1	P 2	Рз	Α	В	С	Ε	F	G	J	Κ	М	Ν	Q 1	Q 2	R	S	U	V 1	V2
AC20C-V-D	1/8, 1/4	1/8	1/8	169.6	87.6	48.5	—	41.6	40	21	2	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30C-V-D	1/4, 3/8	1/8	1/4	224.6	115.4	55	30	55.1	50	26.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40C-V-D	1/4, 3/8, 1/2	1/8	3/8	295.6	147.1	69.7	38.4	72.6	75	35.5	_	50	75.2	40	55	9	18	7	50	65
AC40C-06-V-D	3/4	1/8	1/2	315.6	149.1	71.7	38.4	77.6	75	35.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci [,]	fications						Semi-	standarc	l specific	ations	
Model	Squ embe		Digital pr	essure	Round		Round press		Round press		With auto	PC/PA	bowl	Meta	l bowl		owl with gauge
Model	type pr gau		swite	ch	press gau		gauge (standa		gauge color z		drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20C-V-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9		_
AC30C-V-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40C-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40C-06-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176



AC

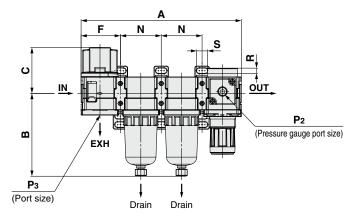
AL

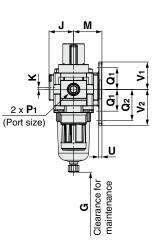
AV

AC20C-D to AC40C-D Series

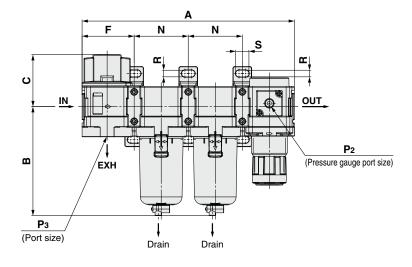
Dimensions: With Pressure Relief 3-Port Valve (V1)

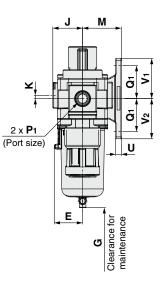
AC20C-V1-D



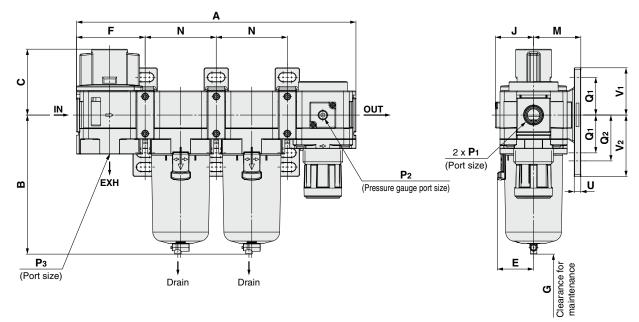


AC30C-V1-D



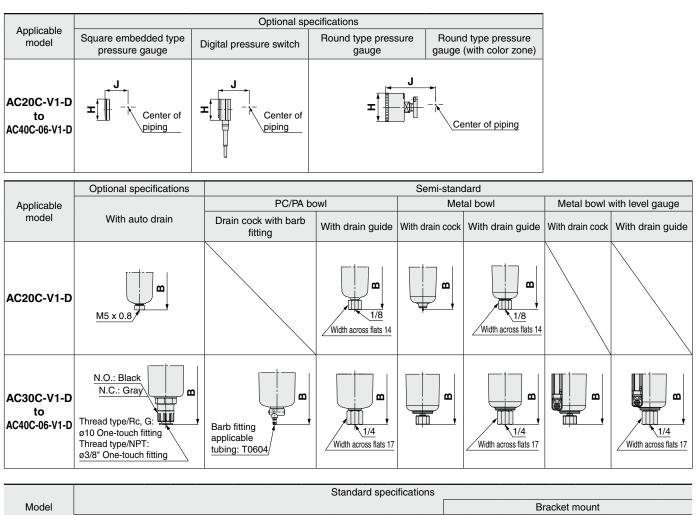


AC40C-V1-D to AC40C-06-V1-D





Air Combination AC20C-D to AC40C-D Series



Model															Bra	icket r	nount			
	P 1	P 2	Рз	Α	В	С	Ε	F	G	J	K	Μ	N	Q 1	Q2	R	S	U	V 1	V2
AC20C-V1-D	1/8, 1/4	1/8	1/8	169.6	87.6	48.5	—	41.6	40	26	2	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30C-V1-D	1/4, 3/8	1/8	1/4	224.6	115.4	55	30	55.1	50	31.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40C-V1-D	1/4, 3/8, 1/2	1/8	3/8	295.6	147.1	69.7	38.4	72.6	75	40.5	—	50	75.2	40	55	9	18	7	50	65
AC40C-06-V1-D	3/4	1/8	1/2	315.6	149.1	71.7	38.4	77.6	75	40.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci [,]	fications						Semi-	standard	l specific	ations	
Model	Squ embe		Digital pr	essure	Round press		Round press		Round press		With auto	PC/PA	bowl	Meta	l bowl		owl with gauge
Model	type pr gaເ		swite	ch	gau		gauge (standa		gauge color z		drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	ſ	Н	J	В	В	В	В	В	В	В
AC20C-V1-D	□28	27	□27.8	37.5	ø37.5	62.5	ø37.5	63.5	ø37.5	63.5	104.9	—	91.4	87.4	93.9	—	_
AC30C-V1-D	□28	32.5	□27.8	43	ø37.5	68	ø37.5	69	ø37.5	69	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40C-V1-D	□28	41.5	□27.8	52	ø42.5	78	ø42.5	78	ø42.5	78	186.9	155.6	153.9	149.5	154	169.5	174
AC40C-06-V1-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

AR AFM / AFD AF Attachments AW + AFM AF + AFM + AR AF + AR

AC

AW + AL AF + AR + AL

AV

46

Air Combination Filter Regulator + Mist Separator AC20D-D to AC40D-D

Symbol



6

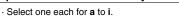
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-D

AC 30 D - 03 DE -

2

Option and Semi-standard Symbol Selection



- When more than one specification is required, indicate
- in alphanumeric order.
- Example) AC30D-F03DE1-16NR-D

$\left \right $	<u> </u>						Û	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc			•
2		Р	Pipe thread type	N *1	NPT	•	•	•
				F *2	G	•	•	•
				+				
				01	1/8	•	_	—
				02	1/4	•		•
8			Port size	03	3/8	_		•
				04	1/2	_	—	•
				06	3/4		—	•
				+				
			Float type	Nil	Without auto drain	•		•
		а	auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•		•
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.			•
				+				
	۳ *			Nil	Without pressure gauge	•		•
4	ion		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)	•	•	•
-	Option*3			G	Round type pressure gauge (with limit indicator)	•	•	•
	Ŭ	b		M	Round type pressure gauge (with color zone)	•		•
		-		E1	Output: NPN output, Electrical entry: Wiring bottom entry		•	•
			Digital pressure	E2	Output: NPN output, Electrical entry: Wiring top entry		•	•
			switch	E3	Output: PNP output, Electrical entry: Wiring bottom entry	•	•	•
				E4	Output: PNP output, Electrical entry: Wiring top entry			•
				+			1	
	len			Nil	Without attachment	•		•
6	Attachment	с	Pressure relief 3-port valve	V	Mounting position: AW + AFM + V	•	•	•
	Atta			V1*7	Mounting position: \mathbf{V} + AW \Box K + AFM	•	•	•
				+				
		d	Set pressure*8	Nil	0.05 to 0.85 MPa setting	•		•
		u	Set pressure	1	0.02 to 0.2 MPa setting	\bullet		•
				+				
				Nil	Polycarbonate bowl	•	•	•
				2	Metal bowl	•	•	•
		е	Bowl*9	6	Nylon bowl	•	•	•
				8	Metal bowl with level gauge			•
	Ð			C	With bowl guard	•	*10	*10
	Semi-standard			6C	With bowl guard (Nylon bowl)		*11	*11
6	star			+	With drain apply	-		•
	ц,		Filter regulator	Nil	With drain cock	•		•
	Se	f	Mist separator	J *13	Drain guide 1/8 Drain guide 1/4	•		_
			drain port*12	W *14	Drain guide 1/4 Drain cock with barb fitting (for ø6 x ø4 nylon tube)		•	•
				<u></u> +				-
				Nil	Relieving type			•
		g	Exhaust mechanism	N	Non-relieving type	•	•	
				+		-	-	-
				Nil	Flow direction: Left to right			•
		h	Flow direction	R	Flow direction: Right to left	•		•
				••		•		-



Air Combination AC20D-D to AC40D-D Series



AC

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

ЧF

AFM / AFD

A R

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		Symbol	Description	-		1 Body size	
					20	30	40
dard		Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	a	•	•	
i Semi-standard	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scal	e	O* ¹⁷	O*17	O*17
Sem		ZA *16	Digital pressure switch: With unit selection function		\triangle^{*18}	\triangle^{*18}	\triangle^{*18}
and NPT1/ AC40D-D).	is NPT1/8 (applicable to /4 (applicable to the The auto drain port con fitting (applicable to th	e AC30D nes with a	-D to pressure gauge will be fitted for standard (0.85 MPa) *14 The ø3/8" type. 0.4 MPa pressure gauge for 0.2 MPa type. ava o-D to *7 The filter regulator is equipped with a backflow function in *15 For	e cor ilable the p	pipe thread typ	metal bowl 2 e: NPT	2 and 8 is not

- AC40D-D). *2 Drain guide is G1/8 (applicable to the AC20D-D) and G1/4 (applicable to the AC30D-D to AC40D-D).
- Soptions G and M are not assembled and supplied loose at the time of shipment.
- *4 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.
- *5 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 The filter regulator is equipped with a backflow function in this configuration. Additionally, when performing maintenance work, make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- *8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- *9 Refer to chemical data on pages 91 and 129 for chemical resistance of the bowl.
- *10 A bowl guard is provided as standard equipment (polycarbonate).
- *11 A bowl guard is provided as standard equipment (nylon).
 *12 The combination of float type auto drain C and D is not available.
- 15 For the 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.) Cannot be used with M: Round type pressure gauge (with color page). Available human at format format.

(with color zone). Available by request for special.
 The digital pressure switch will be equipped with the unit selection function, setting to psi initially.
 *16 For options: E1, E2, E3, E4

- This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 \triangle : Select with options: E1, E2, E3, E4.

Standard Specifications

	Mc	del		AC20D-D	AC30D-D	AC40D-D	AC40D-06-D
Component	Filter R	egulator	[AW]	AW20-D	AW30-D	AW40-D	AW40-06-D
Component	Mist Se	parator	[AFM]	AFM20-D	AFM30-D	AFM40-D	AFM40-06-D
Port size				1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gau	ge port s	size ^{*1}	[AW]		1/	8	
Fluid					A	ir	
Ambient and f	luid temp	peratures*2			−5 to 60°C (No freezing)	
Proof pressu	e				1.5	MPa	
Max. operatin	g pressu	ire			1.01	MPa	
Auto drain mi	nimum	N.C.	[AW/AFM]	0.1 MPa		0.15 MPa	
operating pre	ssure	N.O.	[AW/AFM]	—		0.1 MPa	
Set pressure	range		[AW]		0.05 to 0	.85 MPa	
Max. flow cap	acity*3		[AFM]	200 L/min (ANR)	450 L/min (ANR)	1100 L/n	nin (ANR)
Nominal filtra	tion ratio	*4	[AW]		5 µ	เm	
	uon raui	iy	[AFM]		0.3 µm (99.9% filt	ered particle size)	
Outlet side oil m	ist conce	ntration*5, *6	[AFM]		Max. 1.0 mg/n	n³ (≈ 0.8 ppm)	
Compressed	air purity	/ class*7			ISO 8573-1:20	10 [3 : 4 : 3]*8	
Drain capacit	у		[AW/AFM]	8 cm ³	25 cm ³	45	cm ³
Bowl material			[AW/AFM]		Polycar	bonate	
Bowl guard			[AW/AFM]	Semi-standard (Steel)	S	Standard (Polycarbonate	e)
Construction			[AW]		Relievi	ng type	
Weight				0.30 kg	0.58 kg	1.12 kg	1.21 kg

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

*2 -5 to 50°C for the products with the digital pressure switch

*3 Mist separator inlet pressure: 0.7 MPa. Flow at 20°C, atmospheric pressure, and 65% of the relative humidity

The maximum flow capacity varies depending on the inlet pressure.

Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side. *4 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500

4 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*5 The outlet side oil mist concentration for the following conditions in accordance with [Test condition: ISO 8573-2:2007, Test method ISO 12500-1:2007 compliant] in addition to the conditions above

Conditions: When a new element is used, the oil mist concentration on the filter inlet side is 10 mg/m³, and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable

*6 The bowl seal and other O-rings are slightly lubricated.

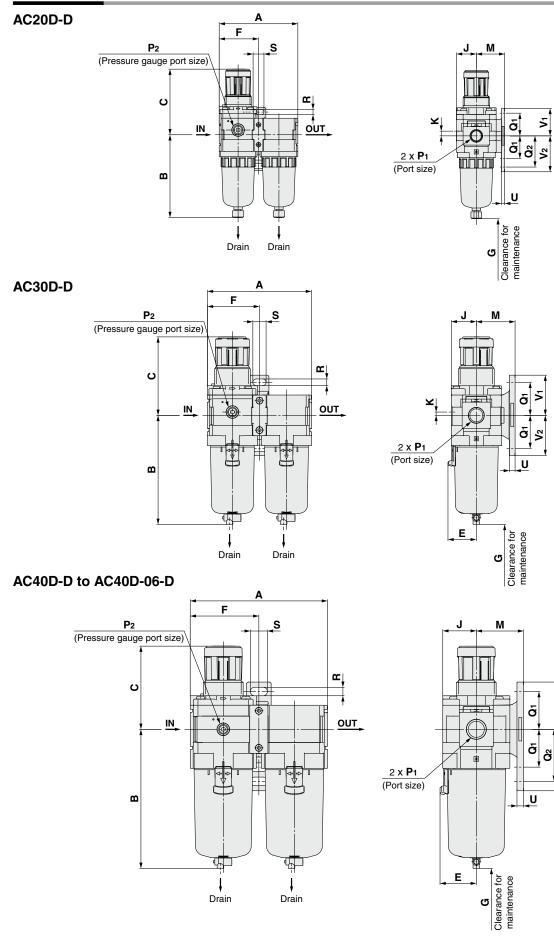
*7 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131.

*8 The compressed air quality class on the inlet side is [7 : 4 : 4].

AC20D-D to AC40D-D Series

Dimensions

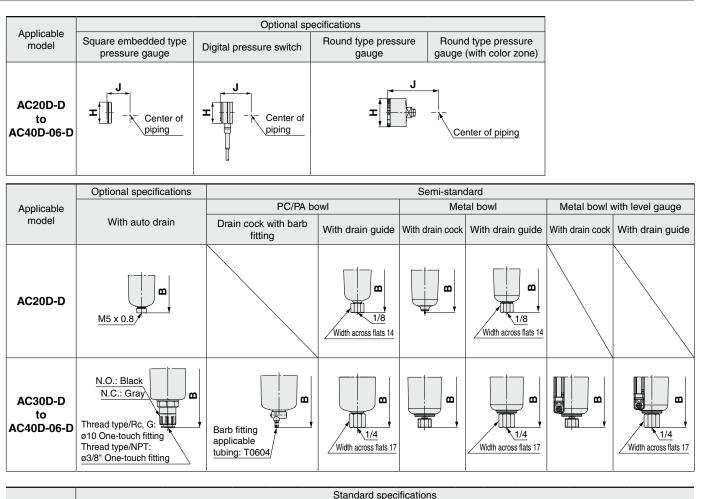




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Air Combination AC20D-D to AC40D-D Series



							oranaa	a opo	omouno									
Model														Brack	et mour	nt		
	P 1	P2	Α	В	С	Е	F	G	J	Κ	М	Q 1	Q2	R	S	U	V 1	V2
AC20D-D	1/8, 1/4	1/8	83.2	87.6	71.8	_	41.6	45	21	5	30	24	33	5.5	11.5	3.5	29	38
AC30D-D	1/4, 3/8	1/8	110.2	115.3	86.5	30	55.1	55	26.5	3.5	41	35	_	7	14	6	42.5	42.5
AC40D-D	1/4, 3/8, 1/2	1/8	145.2	147.1	91.5	38.4	72.6	80	35.5	—	50	40	55	9	18	7	50	65
AC40D-06-D	3/4	1/8	155.2	149.1	93	38.4	77.6	80	35.5	—	50	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standarc	l specific	ations	
Model	Model Square embedded type pressure gauge Switch						Round press		Round press		With auto	PC/P/	bowl	Meta	bowl	Metal be level o	
ty	71 1		swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20D-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	_
AC30D-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40D-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40D-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

AFM / AFD

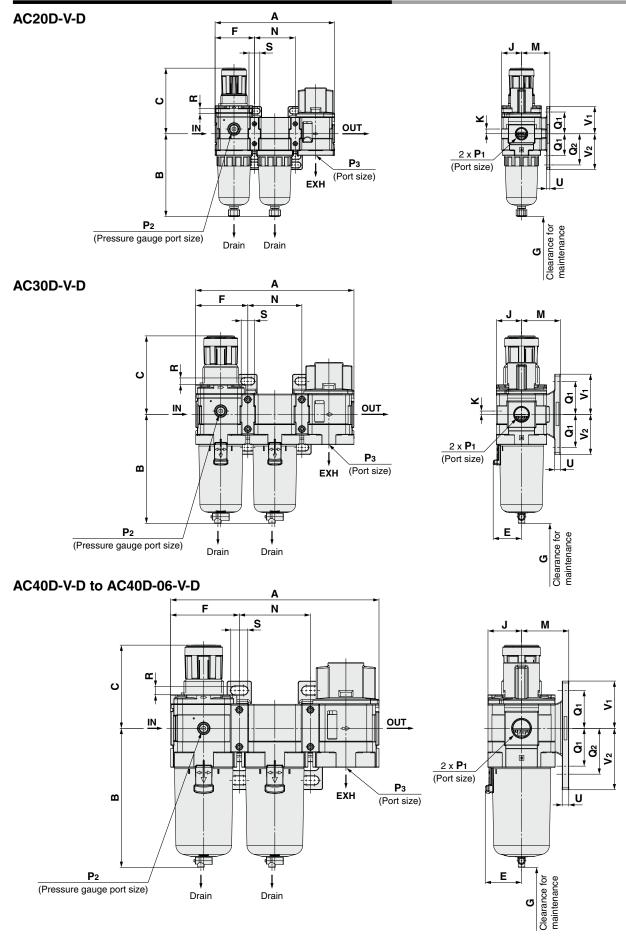
AR

AL

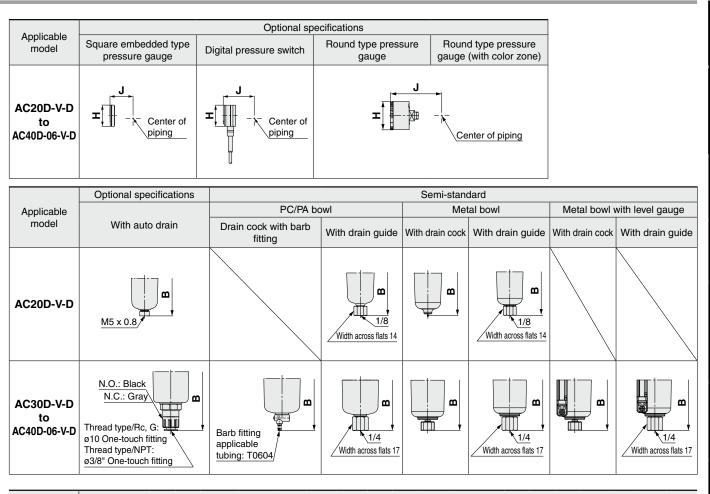
AV

AC20D-D to AC40D-D Series

Dimensions: With Pressure Relief 3-Port Valve (V)



Air Combination AC20D-D to AC40D-D Series



								Standa	rd sp	ecificati	ons									
Model															Bra	icket r	nount			
	P 1	P 2	Рз	Α	В	С	Е	F	G	J	Κ	Μ	N	Q 1	Q2	R	S	U	V 1	V2
AC20D-V-D	1/8, 1/4	1/8	1/8	126.4	87.6	71.8	—	41.6	40	21	5	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30D-V-D	1/4, 3/8	1/8	1/4	167.4	115.3	86.5	30	55.1	55	26.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40D-V-D	1/4, 3/8, 1/2	1/8	3/8	220.4	147.1	91.5	38.4	72.6	80	35.5	—	50	75.2	40	55	9	18	7	50	65
AC40D-06-V-D	3/4	1/8	1/2	235.4	149.1	93	38.4	77.6	80	35.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci [,]	fications						Semi-	standard	l specific	ations	
Model	Squ embe		Digital pr	essure	Round		Round press		Round press		With auto	PC/P4	A bowl	Meta	l bowl		owl with gauge
ty	type pr gau		swite	ch	press gau		gauge (standa		gauge color z		drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20D-V-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	_
AC30D-V-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40D-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40D-06-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

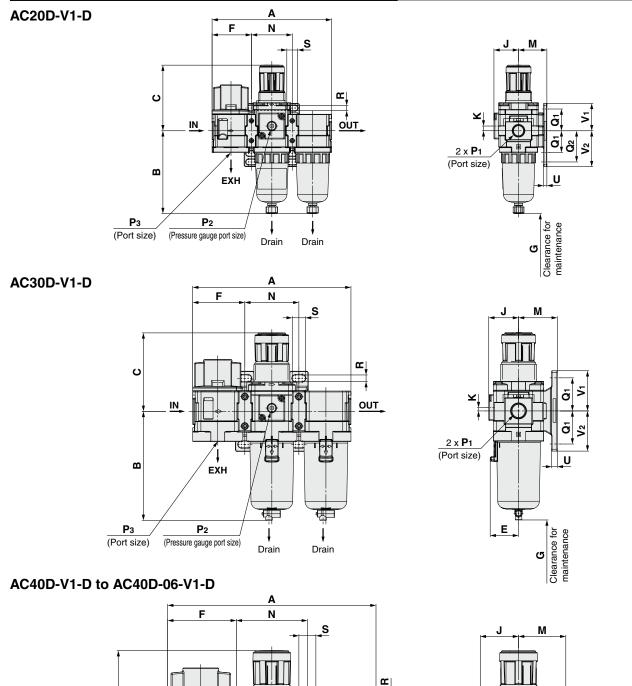
AR

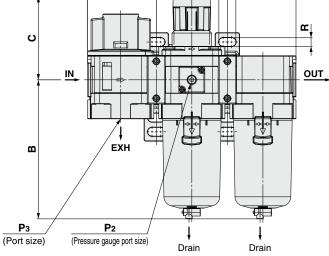
AL

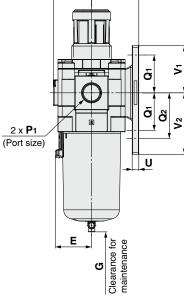
AV

AC20D-D to AC40D-D Series

Dimensions: With Pressure Relief 3-Port Valve (V1)

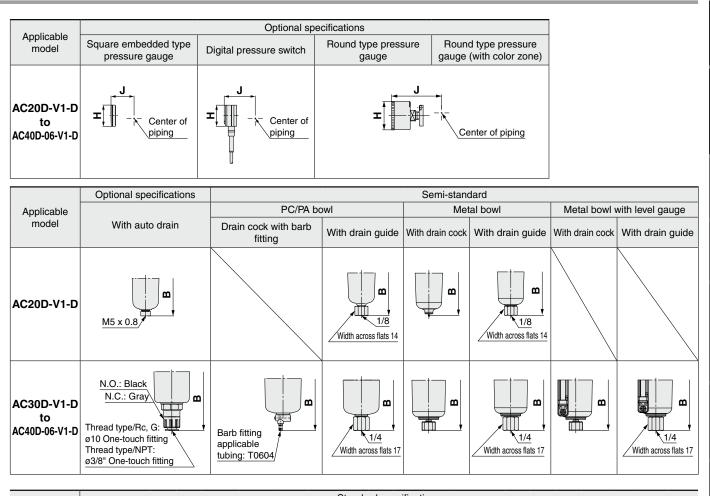








Air Combination AC20D-D to AC40D-D Series



								Standa	rd sp	ecificati	ons									
Model															Bra	icket r	nount			
	P 1	P 2	Рз	Α	В	С	Е	F	G	J	Κ	Μ	Ν	Q 1	Q 2	R	S	U	V 1	V2
AC20D-V1-D	1/8, 1/4	1/8	1/8	126.4	87.6	71.8		41.6	40	26	5	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30D-V1-D	1/4, 3/8	1/8	1/4	167.4	115.3	86.5	30	55.1	55	31.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40D-V1-D	1/4, 3/8, 1/2	1/8	3/8	220.4	147.1	91.5	38.4	72.6	80	40.5	—	50	75.2	40	55	9	18	7	50	65
AC40D-06-V1-D	3/4	1/8	1/2	235.4	149.1	93	38.4	77.6	80	40.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standarc	l specific	ations	
Model	Model Square embedded type pressure gauge Switch					type	Round press		Round press		With auto	PC/P4	A bowl	Meta	l bowl	Metal b level g	owl with gauge
Model	71 1		swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
-	Н	J	Н	J	Н	L	Н	J	Н	J	В	В	В	В	В	В	В
AC20D-V1-D	□28	27	□27.8	37.5	ø37.5	62.5	ø37.5	63.5	ø37.5	63.5	104.9	—	91.4	87.4	93.9	_	_
AC30D-V1-D	□28	32.5	□27.8	43	ø37.5	68	ø37.5	69	ø37.5	69	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40D-V1-D	□28	41.5	□27.8	52	ø42.5	78	ø42.5	78	ø42.5	78	186.9	155.6	153.9	149.5	154	169.5	174
AC40D-06-V1-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176



AC

AW + AL AF + AR + AL

AR

AC-D Series Option / Accessory / Attachment Part No. List

							Par	t no.		
				Martin	For AC20-D	For AC30-D	For AC40-D	For AC40-06-D	For AC50-D	For AC60-D
Contina				Model	For AC20A-D	For AC30A-D	For AC40A-D	For AC40A-06-D	For AC50A-D	For AC60A-D
Section					For AC20B-D	For AC30B-D	For AC40B-D	For AC40B-06-D	For AC50B-D	For AC60B-D
	Desc	cription			For AC20C-D	For AC30C-D	For AC40C-D	For AC40C-06-D		
	Dest				For AC20D-D	For AC30D-D	For AC40D-D	For AC40D-06-D		—
		Round type		dard	G36-1			G46-1		
	*1			MPa setting	G36-4			G46-4		
	Pressure	Round type		dard)-□01-L		G46-10		
	gauge	(with color zone)			G36-4	-□01-L		G46-4-		
		Square		dard			<u> </u>	ressure gauge cov		
Option		embedded type*2		MPa setting				ressure gauge cove		
-	D:-:-:	DK000	· · · · · ·	ing bottom entry			•	5-N-25-M (Switch b		
	switch	pressure		/iring top entry ing bottom entry				5-R-25-M (Switch b 5-N-65-M (Switch b		
	Switch	I		ing bottom entry /iring top entry				5-R-65-M (Switch b		
	Float t	vne		.C.	AD27-D	AD37-D		AD4		
	auto d	••		.0.		AD37-D AD38-D		AD4 AD4		
	Space		. IN.	p. 57	 Y200-D	Y300-D	Y400-D	Y500-D		0-D
Accessory		r with bracke	t	p. 57	Y200T-D	Y300T-D	Y400T-D	Y500T-D		0T-D
							VHS40-□02-D			
	Pressu	re relief 3-port	valve*5, *6	p. 58	VHS20-□01-D	VHS30-□02-D	VHS40-□03-D	VHS40-□06-D	VHS50-□06-D	_
					VHS20-□02-D	VHS30-□03-D	VHS40-□04-D		VHS50-□10-D	
							E400-□02-D		E600-	06-D
	Dimin	adapter*5 *6		- 50	E200-□01-D	E300-□02-D	E400-□03-D	E500-□06-D		□10-D
	Piping	adapter*5, *6		p. 59	E200-□02-D	E300-⊡03-D E300-⊡04-D	E400-□04-D	E500-□10-D	E600-	□12-D
					E200-□03-D	E300-⊡04-D	E400-□06-D		E600-	□14-D
					E200L-□01-D	E300L-01-D	E400L-□02-D	E500L-□04-D	E600L	-□04-D
	L-shap	ped piping ad	apter*5, *6	p. 60	E200L-D01-D E200L-D02-D	E300L-□02-D	E400L-□03-D	E500L-D04-D		-□06-D
						E300L-03-D	E400L-□04-D			·□10-D
					E200T-□01-D	E300T-01-D	E400T-□02-D	E500T-□04-D		⊡04-D
	T-shap	ed piping ad	apter* ^{5, *6}	p. 61	E200T-02-D	E300T-02-D	E400T-03-D	E500T-D06-D		⊡06-D
				1		E300T-□03-D	E400T-□04-D		E600T	⊡10-D
						Y310-□01-D	Y410-□02-D	Y510-□02-D	Y610-	□03-D
				Standard	Y210-□01-D	Y310-□02-D	Y410-□03-D	Y510-□03-D		_04-D
	T-spac	er* ^{5, *6}	p. 62		Y210-□02-D	Y310-□03-D	Y410-□04-D	Y510-□04-D		□06-D
								Y510-□06-D		
				Slim type	Y210-□01-1-D Y210-□02-1-D	Y310-□01-1-D	Y410-□02-1-D	Y510-□02-1-D		03-1-D
					TZTU-⊟02-T-D	Y310-□02-1-D	Y410-□03-1-D	Y510-□03-1-D	¥610-L]04-1-D
						Y34-□01-D	Y44-⊡02-D	Y54-□02-D	Y64-[]03-D
				Standard	Y24-⊡01-D Y24-⊡02-D	Y34-□02-D	Y44-⊡03-D	Y54-⊡03-D Y54-⊡04-D	Y64-[_04-D
Attachment	Cross	spacer*5, *6	p. 63		124-⊡02-0	Y34-□03-D	Y44-⊡04-D	Y54-⊡04-D Y54-⊡06-D	Y64-[]06-D
	0.055	space	p. 6 3	Front and		Y34-□01-1-D	Y44-⊡02-1-D	Y54-□03-1-D		
				back port	Y24-⊡01-1-D	Y34-⊡01-1-D Y34-⊡02-1-D	Y44-⊡02-1-D Y44-⊡03-1-D	Y54-⊡03-1-D	-	_
				selectable type	Y24-⊡02-1-D	Y34-⊡02-1-D Y34-⊡03-1-D	Y44-⊡03-1-D	Y54-⊡04-1-D	-	
				Standard	IS10M-20-D	IS10M-30-D	IS10M-40-D	IS10M-50-D	IS10M	1-60-D
	Pressu	ure switch*6	p. 64		IS10M-20-1-D	IS10M-30-1-D	IS10M-40-1-D	IS10M-50-1-D		-60-1-D
								IS10T-50-02-D		
	Press	ure switch			IS10T-20-□01-D	IS10T-30-01-D		IS10T-50-□03-D		0-□03-D
		spacer*5, *6		p. 65	IS10T-20-□02-D	IS10T-30-□02-D		IS10T-50-□04-D		0-□04-D
		-				15101-30-⊟03-D	IS10T-40-□04-D	IS10T-50-□06-D	15101-6	0-□06-D
	Press	ure switch				IS10L-30-01-D	IS10L-40-02-D		IS10L-6	0-□04-D
		-shaped pipir	ng	p. 66	IS10L-20-□01-D IS10L-20-□02-D	IS10L-30-□02-D	IS10L-40-□03-D	IS10L-50-□04-D IS10L-50-□06-D	IS10L-6	0-□06-D
	adapte	er ^{*5, *6}			1310L-20-L02-D	IS10L-30-□03-D	IS10L-40-□04-D	1310L-30-L100-D	IS10L-6	0-□10-D
			IS10E-20-□01-D	IS10E-30-□02-D	IS10E-40-□02-D		IS10E-6	0-□06-D		
	Pressure switch with piping adapter ^{*5, *6} p. 67		n 67	IS10E-20-□01-D	IS10E-30-02-D	IS10E-40-□03-D	IS10E-50-□06-D		0-□10-D	
			p. 01	IS10E-20-02-D		IS10E-40-□04-D	IS10E-50-□10-D		0-□12-D	
							IS10E-40-□06-D		IS10E-6	0-□14-D
	Right	angle adapter	r*6	p. 68	E210T-D	E310T-D	E410T-D		_	—
	Reduc	ing adapter*6	6	p. 68	E310R-D	E310R-D	E410R-D	_	_	_
		<u> </u>				E410R-D				
		adapter*5, *6		p. 69 p. 70	Y24M-□02-D	Y34M-□03-D E300E-D	Y44M-□04-D E400E-D	-	—	—
	End pl	ater.		n //11	E200E-D	⊢:<0()⊢-1)	E400E-D	/		

I in part numbers for a round type pressure gauge indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the connection thread NPT and pressure gauge supply for psi unit specifications.

*2 Including one O-ring and 2 mounting screws

*3 Lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screws (2 pcs.) are attached. []: Switch body only Regarding how to order the digital pressure switch, refer to page 130. *4 Minimum operating pressure: N.O. type-0.1 MPa; N.C. type-0.1 MPa (AD27-D) and 0.15 MPa (AD37-D/AD47-D). Please contact SMC separately for psi and °F unit display specifications.

∗5 □ in attachment part numbers indicates a pipe thread type. No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread.

*6 Separate spacers are required for modular units.

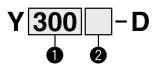
AC

AW + AL || AF + AR + AL

AL

AC-D Series Accessories (Spacer / Spacer with Bracket)

Spacer / Spacer with Bracket



Spacer (Y□-D) Spacer with bracket (Y□T-D)

		Symbol	Description		Body size	1 e [Applicable	e AC size]	
			p	200 [AC20]	300 [AC30]	400 [AC40]	500 [AC40-06]	600 [AC50/AC60]
_		Nil	Spacer		•			
2	Bracket	т	Spacer with bracket	•	•	•	•	•





Standard Specifications

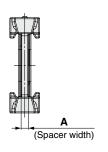
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

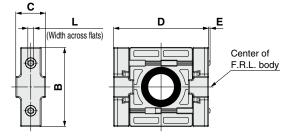
Replacement Parts

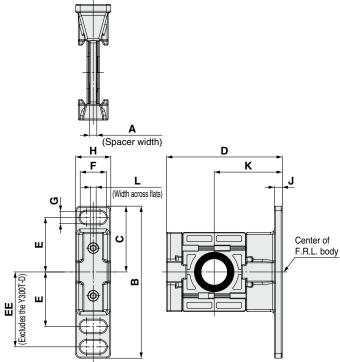
				Part no.		
Description	Material	Y200-D	Y300-D	Y400-D	Y500-D	Y600-D
		Y200T-D	Y300T-D	Y400T-D	Y500T-D	Y600T-D
Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S	Y620P-050S

Dimensions

Spacer



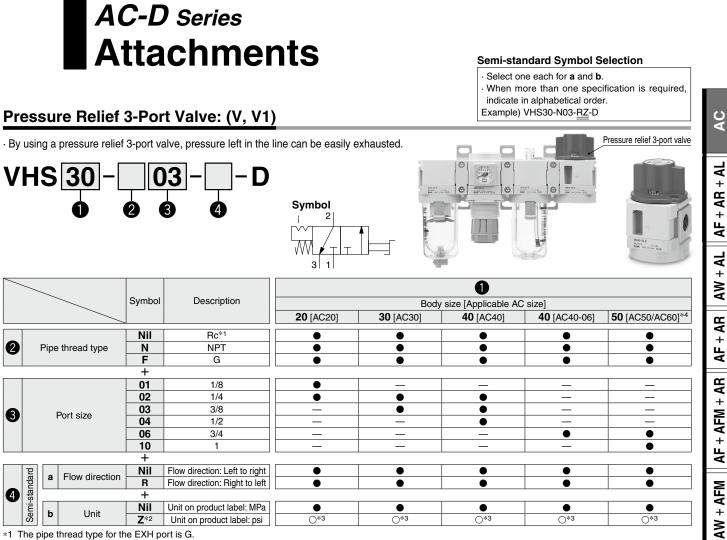




Mode	el	Α	В	С	D	E	L	Applicable size
Y200	-D	3.2	35	13.2	42	0.6	2	AC20-D
Y300	-D	4.2	43	16.2	53	—	3	AC30-D
Y400	-D	5.2	51	19.2	71	—	3	AC40-D
Y500	-D	5.2	54	21.2	71	—	3	AC40-06-D
Y600	D	6.2	64	27.2	90		4	AC50-D
1000	ט-	0.2	04	21.2	90	_	4	AC60-D

_														
	Model	Α	В	С	D	Ε	EE	F	G	Н	J	Κ	L	Applicable size
١	200T-D	3.2	67	29	51	24	33	11.5	5.5	15.5	3.5	30	2	AC20-D
١	/300T-D	4.2	85	42.5	67.5	35	-	14	7	20	6	41	3	AC30-D
Ì	400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	3	AC40-D
١	/500T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	3	AC40-06-D
<u>`</u>	(600T-D	6.2	140	60	115	50	70	20	11	31.2	8	70	4	AC50-D
1	0001-D	0.2	140	00	115	50	10	20	111	31.2	0	10	4	AC60-D

Spacer with bracket



The pipe thread type for the EXH port is G. *1

*2 For the 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.)

SMC

*3 O: For the pipe thread type: NPT only

*4 The VHS50 can be connected to the AC60.

Standard Specifications

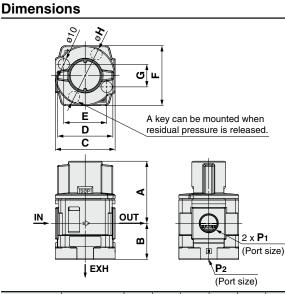
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Flow Rate Characteristics

1 Ion Hat										
	Port s	Flow rate characteristics								
Model			IN -	→ OUT		$OUT \rightarrow EXH$				
Model	IN, OUT	EXH	C (dm³/s⋅bar)	b	Cv	C (dm³/s⋅bar)	b	Cv		
VHS20	1/8	1/8	4.0	0.41	1.1	3.7	0.42	1.1		
VH320	1/4	1/0	5.8	0.31	1.4	3.8	0.42	1.1		
VHS30	1/4	1/4	8.8	0.44	2.4	8.0	0.46	2.3		
VH330	3/8	1/4	14.1	0.28	3.5	7.8	0.46	2.2		
	1/4		9.5	0.49	2.8	13.3	0.47	3.6		
VHS40	3/8	3/8	17.2	0.47	4.8	13.6	0.47	3.7		
	1/2		26.7	0.29	6.3	13.4	0.43	3.7		
VHS40-06	3/4	1/2	34.0	0.22	7.6	16.1	0.41	4.4		
VHS50	3/4	1/2	45.0	0.26	10.6	23.0	0.49	6.4		
VH350	1	1/2	53.3	0.36	13.5	22.8	0.49	6.3		

Caution on Mounting

- · Use an air filter on the inlet side for operating protection.
- · When mounting a silencer, etc., on the EXH port, refer to the operation manual.



						(FUIL	3120)	
Model	I	P1	P 2	Α	В	С	D	Applicable size
VHS20-D	1/8	3, 1/4	1/8	48.5	23	40	37	AC20-D
VHS30-D	1/4	, 3/8	1/4	55	32	53	49	AC30-D
VHS40-D	1/4, 3	8/8, 1/2	3/8	69.7	41.3	70	63	AC40-D
VHS40-06-D	3	3/4	1/2	71.7	43.3	75	63	AC40-06-D
VHS50-D	3/-	4, 1	1/2	86.5	44.5	90	80	AC50-D/AC60-D
Model	Е	F	G	H	Applical	ole size		
VHS20-D	28	42	17.5	40	AC2	0-D	-	
VHS30-D	38	53	20	53	AC3	0-D		
VHS40-D	52	71	29	70	AC4	0-D		
VHS40-06-D	52	71	29	70	AC40	-06-D		
VHS50-D	72	90	33	90	AC50-D/		-	



<u>Attachments</u>

AF

AFM / AFD

AR

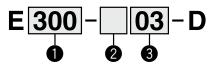
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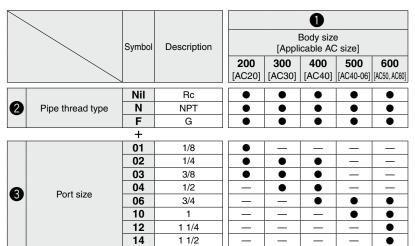
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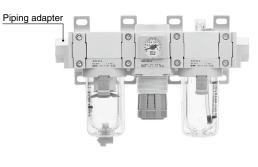
AC-D Series

Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2

· Using on the inlet side or the outlet side of F.R.L. units makes it easier to perform maintenance, as the component can be installed/ removed without removing the piping.





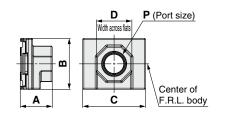




Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



Model	Р	Α	В	С	D	Applicable AC size
E200-D	1/8, 1/4, 3/8	24	35	42	24	AC20-D
E300-D	1/4, 3/8, 1/2	27	43	53	30	AC30-D
E400-D	1/4, 3/8, 1/2, 3/4	30	51	71	36	AC40-D
E500-D	3/4	31	54	71	36	AC40-06-D
E900-D	1	31	54		46	AC40-06-D
E600 D	3/4, 1	39	64	00	46	AC50-D
E600-D	1 1/4, 1 1/2	42	64	90	63	AC60-D

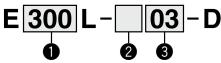
Caution on Mounting

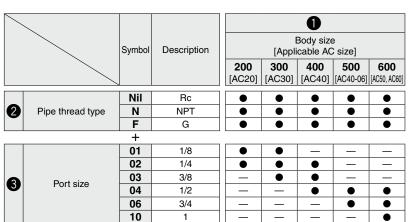
Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

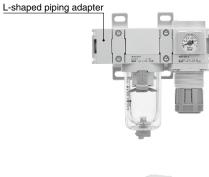
Attachments **AC-D** Series

L-Shaped Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4, 1

- · Upward/downward piping is possible on the inlet side and the outlet side of F.R.L. units.
- · Ideal for space-saving and reducing piping labor
- Using on the inlet side or the outlet side of F.R.L. units makes it easier to perform maintenance, as the component can be installed/ removed without removing the piping.





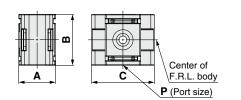




Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



Model	Р	Α	В	С	Applicable AC size
E200L-D	1/8, 1/4	28	35	42	AC20-D
E300L-D	1/8, 1/4, 3/8	31	43	53	AC30-D
E400L-D	1/4, 3/8, 1/2	39	51	71	AC40-D
E500L-D	1/2, 3/4	47	54	71	AC40-06-D
E600L-D	1/0 0/4 1	62	64	00	AC50-D
E000L-D	1/2, 3/4, 1	62	64	90	AC60-D

Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

A

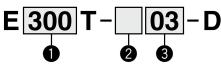
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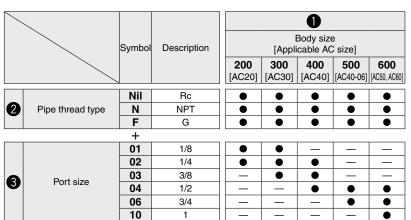
AF

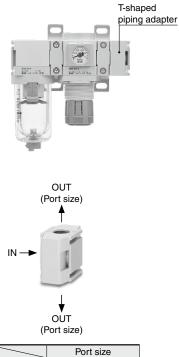
AC-D Series

T-Shaped Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4, 1

- · Both upward and downward piping are possible on the inlet and outlet sides of F.R.L. units.
- · Ideal for space-saving and reducing piping labor
- Using on the inlet side or the outlet side of F.R.L. units makes it easier to perform maintenance, as the component can be installed/ removed without removing the piping.







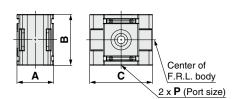
6

IN OUT

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	–5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



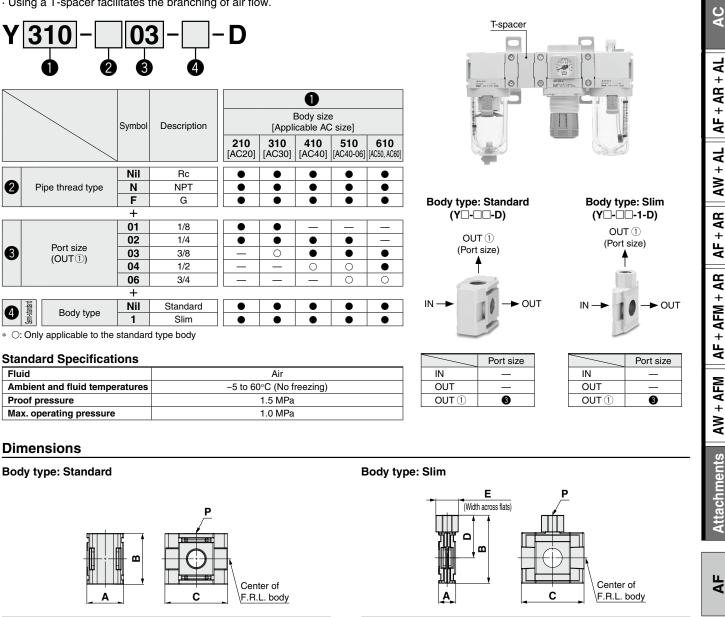
Model	Р	Α	В	С	Applicable AC size
E200T-D	1/8, 1/4	28	35	42	AC20-D
E300T-D	1/8, 1/4, 3/8	31	43	53	AC30-D
E400T-D	1/4, 3/8, 1/2	39	51	71	AC40-D
E500T-D	1/2, 3/4	47	54	71	AC40-06-D
E600T-D	1/2. 3/4. 1	62	64	90	AC50-D
E0001-D	1/2, 3/4, 1	02	04	90	AC60-D

Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

T-Spacer: 1/8, 1/4, 3/8, 1/2, 3/4

· Using a T-spacer facilitates the branching of air flow.



Model	P	Α	В	С	Applicable AC size
Y210-D	1/8, 1/4	28	35	42	AC20-D
Y310-D	1/8, 1/4, 3/8	31	43	53	AC30-D
Y410-D	1/4, 3/8, 1/2	39	51	71	AC40-D
Y510-D	1/4, 3/8, 1/2, 3/4	47	54	71	AC40-06-D
Y610-D	3/8, 1/2, 3/4	62	64	90	AC50-D, AC60-D

	A ++		-	U		F.R.L.	bouy
Model	Р	Α	В	С	D	Е	Applicable AC size
Y210-1-D	1/8, 1/4	14.6	48.5	42	31	19	AC20-D
Y310-1-D	1/8, 1/4	14.6	57.5	53	36	19	AC30-D
Y410-1-D	1/4, 3/8	18.6	67	71	41.5	24	AC40-D
Y510-1-D	1/4, 3/8	18.6	70	63	43	24	AC40-06-D
Y610-1-D	3/8, 1/2	22	87	90	55	30	AC50-D, AC60-D

Caution on Mounting

· Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

. The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

. When the slim body type is to be mounted to a wall using a spacer with bracket, use a spacer on only one side.

AR

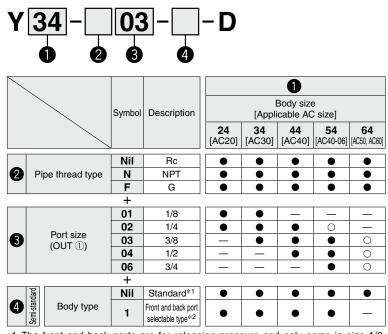
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AC-D Series

Cross Spacer: 1/8, 1/4, 3/8, 1/2, 3/4

• The piping can be branched upward/downward (OUT 1) or forward/backward (OUT 2).



The front and back ports are for releasing pressure and only come in size 1/8, *1 irrespective of the 3 port size. The minimum port size is 1.4 mm.

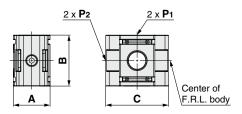
- *2 The front and back ports come in the same size as the 3 port size. *3 "O" indicates that only the standard body type is applicable.

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

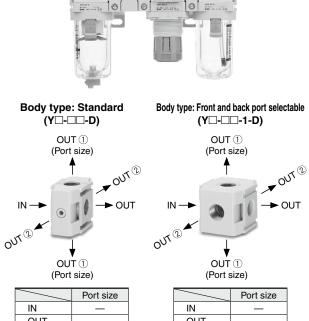
Dimensions

Body type: Standard



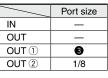
Model	P 1	P 2*1	Α	В	С	Applicable AC size
Y24-D	1/8, 1/4	1/8	28	35	42	AC20-D
Y34-D	1/8, 1/4, 3/8	1/8	31	43	53	AC30-D
Y44-D	1/4, 3/8, 1/2	1/8	39	51	71	AC40-D
Y54-D	1/4, 3/8, 1/2, 3/4	1/8	47	54	71	AC40-06-D
Y64-D	3/8, 1/2, 3/4	1/8	62	64	90	AC50-D, AC60-D

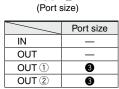
*1 A resin plug is attached to the P2 port and shipped together with the product.



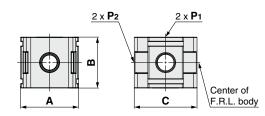
Cross spacer

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Body type: Front and back port selectable



Model	P1, P2 *1	Α	В	С	Applicable AC size
Y24-1-D	1/8, 1/4	40	35	42	AC20-D
Y34-1-D	1/8, 1/4, 3/8	49	43	53	AC30-D
Y44-1-D	1/4, 3/8, 1/2	60	51	71	AC40-D
Y54-1-D	3/8, 1/2, 3/4	72	54	71	AC40-06-D

*1 Two hexagon socket head plugs the same size as the P1 and P2 ports are shipped together with the product.

Caution on Mounting

· Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

. The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.



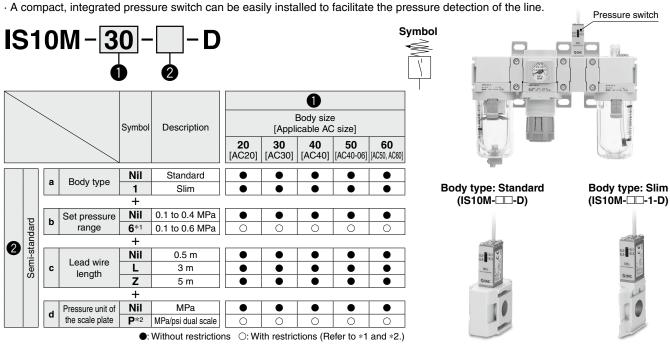
Attachments **AC-D** Series

Semi-standard Symbol Selection

Select one each for a to d.

 \cdot When more than one specification is required, indicate in alphanumeric order. Example) IS10M-30-6LP-D

Pressure Switch



*1 The set pressure range for the 6P 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.)

Standard Specifications

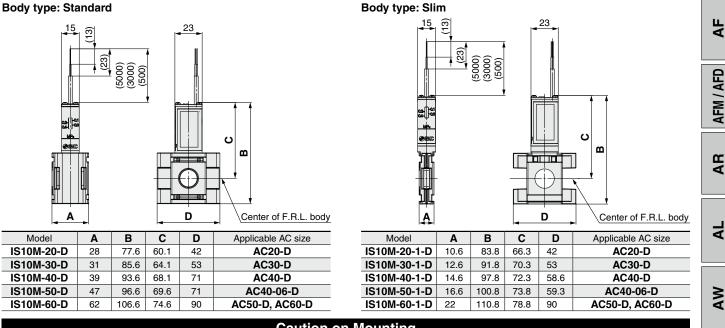
otandara opeenneations	
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Set pressure range (when OFF)	0.1 to 0.4 MPa
Hysteresis	0.08 MPa or less
Contact point configuration	1a

Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)				
Operating voltage: AC, DC	100 V or less				
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA				

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

Dimensions



Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.
When the slim body type is to be mounted to a wall using a spacer with bracket, use a spacer on only one side.

SMC

AC-D Series

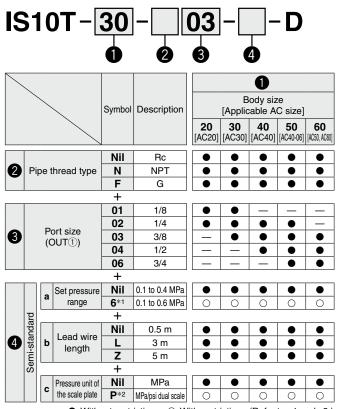
Semi-standard Symbol Selection

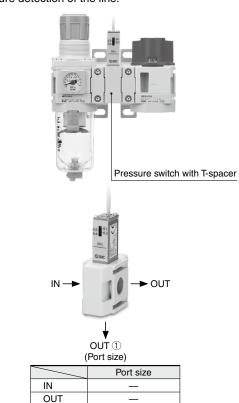
Symbol

Select one each for a to c.
 When more than one specification is required, indicate in alphanumeric order.
 Example) IS10T-30-N03-6LP-D

Pressure Switch with T-Spacer

· A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.





•: Without restrictions O: With restrictions (Refer to *1 and *2.)

*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

*2 For the 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.)

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (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
Contact point configuration	1a

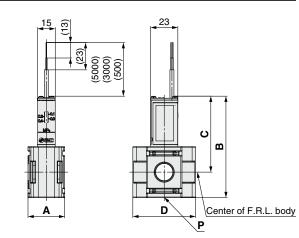
Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA

* For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com

Dimensions

OUT ①



6

Model	Р	Α	В	С	D	Applicable AC size
IS10T-20-D	1/8, 1/4	28	77.6	60.1	42	AC20-D
IS10T-30-D	1/8, 1/4, 3/8	31	85.6	64.1	53	AC30-D
IS10T-40-D	1/4, 3/8, 1/2	39	93.6	68.1	71	AC40-D
IS10T-50-D	1/4, 3/8, 1/2, 3/4	47	96.6	69.6	71	AC40-06-D
IS10T-60-D	3/8, 1/2, 3/4	62	106.6	74.6	90	AC50-D, AC60-D

Caution on Mounting

• Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

• The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

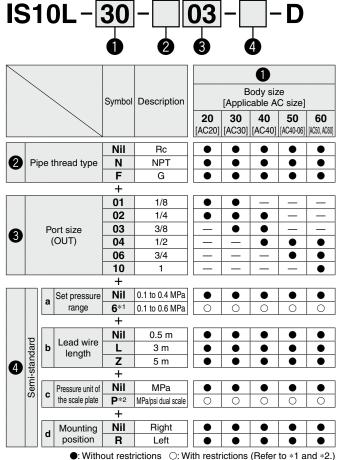
Attachments **AC-D** Series

Semi-standard Symbol Selection

Select one each for a to d. · When more than one specification is required, indicate in alphanumeric order. Example) IS10L-30-N03-6LP-D

Pressure Switch with L-Shaped Piping Adapter

- · A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.
- · Using on the inlet side or the outlet side of F.R.L. units allows the component to be installed/removed without removing the piping.



*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

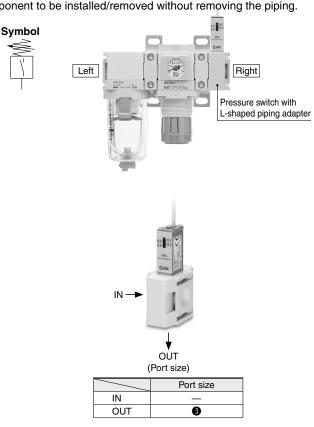
Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (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
Contact point configuration	1a

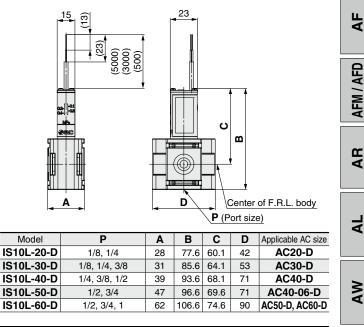
Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA

* For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com



Dimensions



Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required. **SMC**

AC

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

^{*2} For the pipe thread type: NPT only

AC-D Series

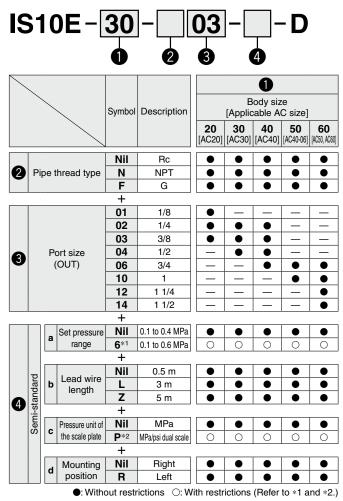
Semi-standard Symbol Selection

Select one each for a to d.
 When more than one specification is required, indicate in alphanumeric order.

Example) IS10E-30-N03-6LP-D

Pressure Switch with Piping Adapter

· A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.



*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

*2 For the 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.)

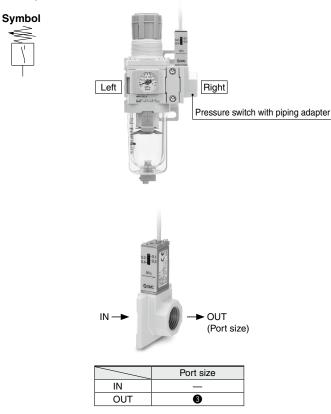
Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (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
Contact point configuration	1a

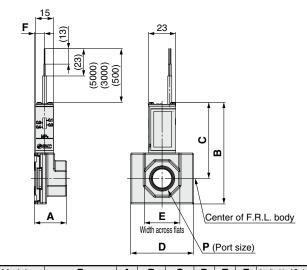
Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA

* For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com



Dimensions



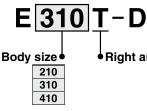
Model	Р	Α	В	С	D	Е	F	Applicable AC size	
IS10E-20-D	1/8, 1/4, 3/8	24	77.8	60.3	42	24		AC20-D	
IS10E-30-D	1/4, 3/8, 1/2	27	85.8	64.3	53	30]	AC30-D	
IS10E-40-D	1/4, 3/8, 1/2, 3/4	30	93.8	68.3	71	36	8.5	AC40-D	
IS10E-50-D	3/4	31 96.8 6	00.0	69.8	71	36		AC40-06-D	
	1		09.0	1	46]	AC40-00-D		
IS10E-60-D	3/4, 1	39	106.0	74 0	90	46	0.5	AC50-D,	
	1 1/4, 1 1/2	42	106.8 74.8		74.8 90		9.5	AC60-D	

Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required. 67

Right Angle Adapter

· Allows for modular connection with the product rotated 90 degrees

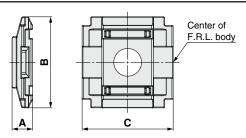


Right angle adapter

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



Right angle	adapter

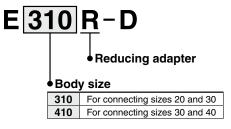
Model	Α	В	С	Applicable AC size
E210T-D	9	42	42	AC20-D
E310T-D	12	53	53	AC30-D
E410T-D	15	71	71	AC40-D

Caution on Mounting

- · Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.
- · When mounting to a wall using a spacer with bracket, use a spacer on only one side.

Reducing Adapter

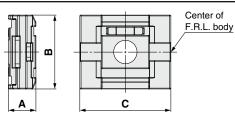
· Allows for modular connection with products 1 body size larger or smaller



Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

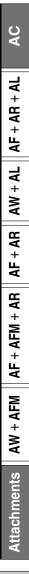
Dimensions





Reducing adapter

Model	Α	В	С	Applicable AC size
E310R-D	16	43	53	AC20-D, AC30-D
E410R-D	20	51	71	AC30-D, AC40-D



A₹

AR

Caution on Mounting

- · Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.
- \cdot When mounting to a wall using a spacer with bracket, use a spacer on only one side.

AC-D Series

Semi-standard Symbol Selection

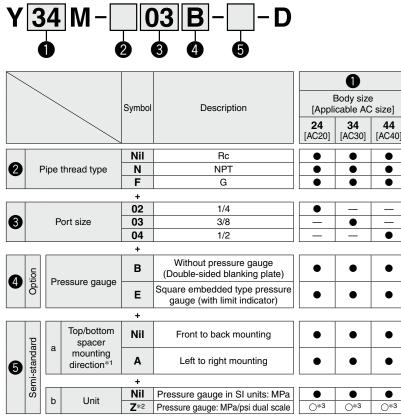
Select one each for a and b.

When more than one specification is required, indicate in alphabetical order.

Example) Y34M-N03E-AZ-D

Cross Adapter: 1/4, 3/8, 1/2

· Allows for devices to be connected on the top, bottom, left, and right with a spacer



*1 It is possible to change the mounting direction of the spacer (From front to back to left to

right). For details on how to do so, refer to the operation manual. For the pipe thread type: NPT. This product is for overseas use only according to the New *2 Measurement Act. (The SI unit type is provided for use in Japan.)

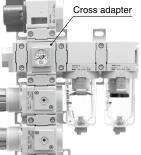
*3 O: For the pipe thread type: NPT only

Standard Specifications

Fluid	Air			
Ambient and fluid temperatures	−5 to 60°C (No freezing)			
Proof pressure	1.5 MPa			
Max. operating pressure	1.0 MPa			

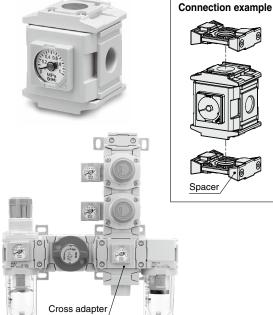
Top/bottom spacer mounting direction: Front to back mounting (Nil)







Top/bottom spacer mounting direction: Left to right mounting (A)



Caution on Mounting

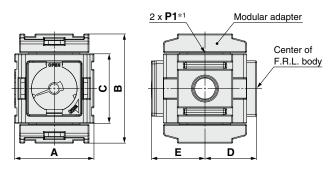
· Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

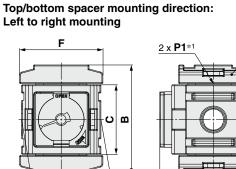
. The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

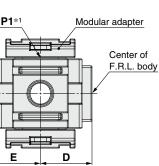


Dimensions

Top/bottom spacer mounting direction: Front to back mounting





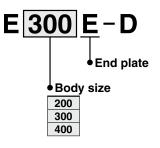


							Optional specifications		
Model	Standard specifications					Without	Square	Spacer	Applicable AC size
						pressure	embedded type	U U U	size
						gauge	pressure gauge	mounting	
	P1 *1	Α	В	С	D	E	E	F	
Y24M-D	1/4	40	55	35	26	26	27	42	AC20-D
Y34M-D	3/8	53	63	43	31.5	31.5	32.5	53	AC30-D
Y44M-D	1/2	70	77	51	40.5	40.5	41.5	71	AC40-D

*1 By removing the modular adapter, the female threads on the top and bottom surfaces can be used as piping ports for air release.

End Plate

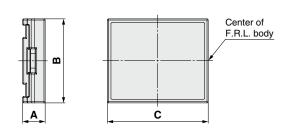
 \cdot For blocking the unused piping ports on sides without a modular connection



Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions





Model	Α	В	С	Applicable AC size
E200E-D	9.4	35	42	AC20-D
E300E-D	9.4	43	53	AC30-D
E400E-D	12.4	51	71	AC40-D

Caution on Mounting

• Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

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AC-D 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.smcworld.com

Air Supply

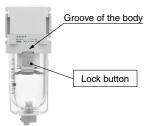
A Caution

1. Use an air filter with 5 μ m 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

A Caution

 When the bowl is installed on the air filter, filter regulator, lubricator, mist separator, or micro mist separator (AC30-D to AC60-D), 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.



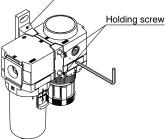
2. Tighten the 2 holding screws on the spacer with bracket or spacer evenly.

Tighten them to the recommended tightening torque.

Insufficient tightening torque may result in loosening or sealing failure. Excessive tightening torque may damage the thread, etc.

Recommende	Recommended Torque Unit: N·m								
Applicable model	AC20□	AC30□	AC40□	AC40⊡-06	AC50□ AC60□				
Spacer with bracket part no.	Y200T-D	Y300T-D	Y400T-D	Y500T-D	Y600T-D				
Spacer part no.	Y200-D	Y300-D	Y400-D	Y500-D	Y600-D				
Torque	0.36 ±0.036	1.2 ±0.05	1.2 ±0.05	1.4 ±0.05	2.0 ±0.1				

Spacer with bracket



Selection

\land Warning

1. Piping load and moment

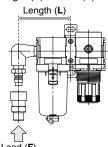
Avoid any torsional or bending moments other than those caused by the equipment's own weight as failure to do so may result in damage.

Support external piping separately. If moment application is unavoidable during operation, the moment should be lower than the max. moment shown below.

Piping materials without flexibility, such as steel tube piping, are prone to being affected by excess moment loads or vibrations from the piping side. Use flexible tubing in between to avoid such effects.

						Unit. N.III
App	olicable model	AC20□	AC30□	AC40□	AC40□-06	AC50□ AC60□
Max	k. moment (M)	14.5	16	19.5	35	45

Max. moment (M) = Length (L) x Load (F)



2. Float type auto drain

Operate under the following conditions to avoid a 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-D: 0.1 MPa or more
- Operating pressure for AD37-D/AD47-D: 0.15 MPa or more
- **3.** Use a regulator or filter regulator with 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.

A Caution

- When releasing air at the intermediate position using a T-spacer on the inlet side of the lubricator, lubricant may backflow. Therefore, releasing air that does not contain traces of lubricant is not possible. To release air that does not contain traces of lubricant, use a check valve (AKM series) on the inlet side of the lubricator to prevent a backflow of the lubricant.
- 2. 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.
- **3.** 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.
- 4. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

For air combination selection, refer to the "Product Selection Guide." $% \left({{{\rm{S}}}_{{{\rm{S}}}}} \right) = \left({{{\rm{S}}_{{{\rm{S}}}}}} \right) = \left({{{\rm{S}}_{{{\rm{S}}}}}} \right)$

AC	
AW + AL AF + AR + AL	
AW + AL	
AF + AR	
AF + AFM + AR	
AW + AFM	
Attachments	
AF	
AFM / AFD	
AR	
AL	
AW	

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⊘SMC

Modular Type Air Filter **AF Series**

Air Filter AF Series	Model	Port size	Filtration [µm]	Options
	AF20-D	1/8, 1/4		
and and a the second se	AF30-D	1/4, 3/8		
	AF40-D	1/4, 3/8, 1/2	5	Bracket
	AF40-06-D	3/4		Float type auto drain
	AF50-D	3/4, 1		
p. 74 to 83	AF60-D	1		

nb Filte								D		0-01-0 mm - 23 M. 2 M. 2 M. 2 M.
		Air Filter with 2 1	Auto Drai	in					NO REPORTS	
	I	I		How to Order					AF	30-D
٩F	3)3 6		 Select on When model in alphan Example) 	e each fo re than o umeric o	or a to g . one specif oder.	ication is r		
			Symbol	Description						
			Cymbol	Decomption		20	30	Body size	, 50	60
			Nil	Rc					•	
2	Pij	be thread type	N	NPT		•	•	•	•	•
			F +	G		•			•	
			01	1/8			—	—		
	Port size		02	<u> </u>		•		•		<u> </u>
3			03	1/2			•	•		<u> </u>
			06	3/4		_		•	•	—
			10	1		—	—	—	•	
			+ Nil	Without mounting option						
	a	Mounting	B*1	With bracket						
			+							
	2	Float type auto	Nil	Without auto drain		•			•	•
	b	drain*2	C*3 D*4	N.C. (Normally closed) Drain port is closed when pressure is not N.O. (Normally open) Drain port is open when pressure is not				•	<u> </u>	
			+	N.O. (Normally open) Drain port is open when pressure is not	applieu.	_	•	U	_	
			Nil	Polycarbonate bowl					•	
			2	Metal bowl		•	•	•	•	•
	c	Bowl ^{*5}	6	Nylon bowl			•	•	•	
			8 C	Metal bowl with level gauge With bowl guard		-	*6	*6	*6	*6
			6C	With bowl guard (Nylon bowl)		ě	*7	*7	*7	*7
			+							
7	d	Indicator	Nil	Without indicator		•	•	● ●*12	<u> </u>	
			<u> L</u> +	With element service indicator*14					•	
Cami-etandard			Nil	With drain cock					•	
	e	Drain port ^{*8}	J *9	Drain guide 1/8			-	—		—
0	, C	Drain port	_	Drain guide 1/4			•	•	•	•
			W *10 +	Drain cock with barb fitting					•	
			Nil	Flow direction: Left to right					•	
	f	Flow direction	R	Flow direction: Right to left			Ŏ	•	Ŏ	•
			+							
	g	Unit	Nil Z *11	Unit on product label: MPa, °C Unit on product label: psi, °F		● ○* ¹³	● ○* ¹³	● ○* ¹³		● ○* ¹³

*3 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.

*4 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.

*5 Refer to chemical data on page 83 for chemical resistance of the bowl.
*6 A bowl guard is provided as standard equipment (polycarbonate).

*7 A bowl guard is provided as standard equipment (polycarbonate).
*8 The combination of float type auto drain C and D is not available.
*9 Without a valve function. The mounting screws are the same as the thread of 2.
*10 The combination of metal bowl 2 and 8 is not available.

*11 For the 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.)

*12 Excludes port size "06"
*13 O: For the pipe thread type: NPT only
*14 A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.



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AF20-D to AF60-D Series

Standard Specifications

Model	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D			
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1			
Fluid			A	lir					
Ambient and fluid temperatures	-5 to 60°C (No freezing)								
Proof pressure	1.5 MPa								
Max. operating pressure	pressure 1.0 MPa								
Auto drain minimum N.C.	0.1 MPa			0.15 MPa					
operating pressure N.O.	—			0.1 MPa					
Nominal filtration rating ^{*1}	5 μm								
Compressed air purity class ^{*2}			ISO 8573-1:20	10 [6 : 8 : 4] ^{*3}					
Drain capacity	8 cm ³	25 cm ³		45 0	cm ³				
Bowl material			Polyca	rbonate					
Bowl guard	Semi-standard (Steel)		Star	ndard (Polycarbon	ate)				
Weight	0.09 kg	0.17 kg	0.35 kg	0.39 kg	0.85 kg	0.92 kg			

*1 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant] Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*2 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131.

*3 The compressed air quality class on the inlet side is [7:9:4].

Bowl Assembly/Part Nos.

Bowl	Drain discharge	Ducing and	Drain port Other AE20-D AE30-D AE40-D AE50-D A								
material	mechanism	Drain port	Other	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D		
		With drain cock	_	C2SF-D	_			-			
		With drain cock	With bowl guard	C2SF-C-D	C3SF-D		C4S	F-D			
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-W-D		C4SF	-W-D			
Dolycorhonata		With drain guide	_	C2SF□-J-D	—		_	-			
Polycarbonate		(without valve function)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D	C4SF□-J-D					
	Automatic*1	Normally algood (N.C.)	_	AD27-D	—		-				
	(Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-C-D	AD37□-D	AD47□-D					
	(Auto urain)	Normally open (N.O.)	With bowl guard	_	AD38□-D		AD48	S⊡-D			
		With drain cock	_	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				
Nylon		With drain guide	_	C2SF□-6J-A		 C4SF□-6J-A					
NyION		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A						
	Automatic*1	Normally closed (N.C.)	—	AD27-6-A	—						
	(Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A		AD47[]-6-A			
		Normally open (N.O.)	With bowl guard	_	AD38□-6-A		AD48	6-A			
		With drain cock	_	C2SF-2-A	C3SF-2-A		C4SF	-2-A			
	Manual	With drain COCK	With level gauge	_	C3LF-8-A		C4LF	-8-A			
	Mariuar	With drain guide	_	C2SF⊡-2J-A	C3SF□-2J-A		C4SF]-2J-A			
Metal		(without valve function)	With level gauge	_	C3LF□-8J-A		C4LF]-8J-A			
iviciai		Normally closed (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)	uto drain)		_	AD38[]-2-A		AD48]-2-A			
		Normally open (N.O.)	With level gauge		AD38□-8-A		AD48]-8-A			

SMC

*1 The bowl assembly comes with a bowl seal.

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

No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8") Please contact SMC separately for psi and °F unit display specifications.

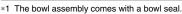
Option/Part Nos.

Optional			Ма	del				
specifications	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D		
Bracket	AF24P-	AF34P-	AF44P-	AF49P-				
assembly*1	070AS	070AS	070AS	070AS	AF54P-070AS			
Auto drain	Refer to "Bowl Assembly/Part Nos."							

*1 The assembly consists of a bracket A/B and 2 mounting screws.

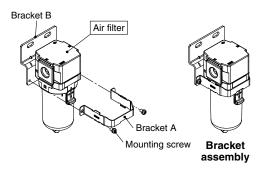
Replacement Parts

Description			Par	t no.						
Description	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D				
Filter element	AF20P-	AF30P-	A E 4 O E	2-060S	AF50P-	AF60P-				
Filler element	060S	060S		-0003	060S	060S				
Deffle	AF24P-	AF34P-	AF44P-040S		AF64P-					
Baffle	040S	040S		-0405	040S	040S				
Bowl seal	C2SFP-	C32FP-		C42FF	2605					
DOWI Seal	260S	260S		04266	-2003					
Bowl		Defer to "Devid Assembly/Devit Mas"								
assembly ^{*1, *2} Refer to "Bowl Assembly/Part Nos."										



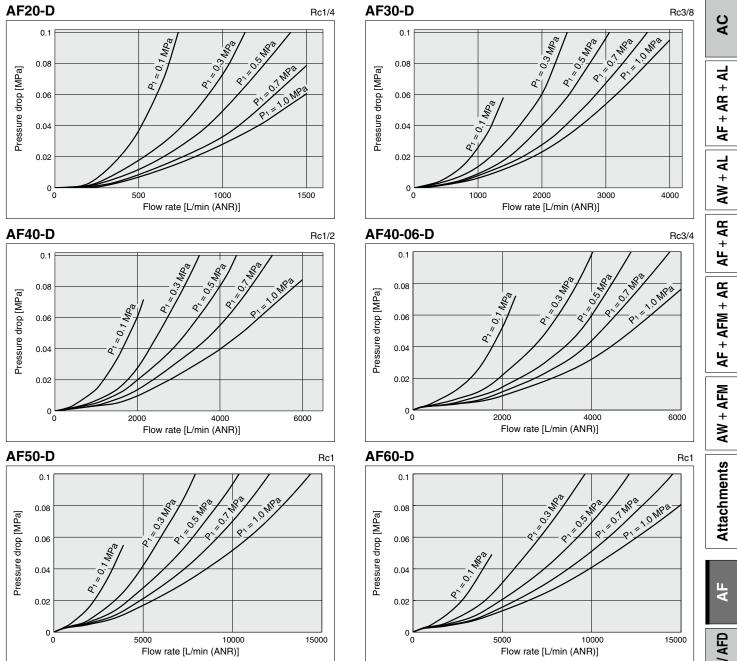
*2 Please contact SMC separately for psi and °F unit display specifications.

75





Air Filter AF20-D to AF60-D Series



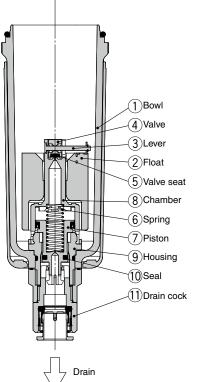
Flow Rate Characteristics (Representative values)

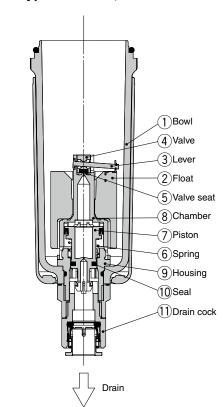


AF20-D to AF60-D Series

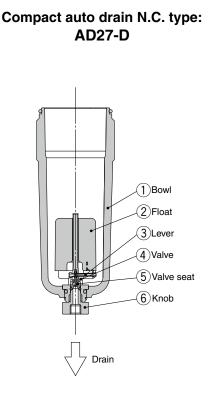
Working Principle: Float Type Auto Drain

N.O. type: AD38-D, AD48-D





N.C. type: AD37-D, AD47-D



• When pressure inside the bowl is released:

When pressure is released from the bowl (1), the piston (7) is lowered by the spring (6).

The sealing action of the seal 0 is interrupted, and the outside air flows inside the bowl 1 through the housing hole 9 and the drain cock 1.

Therefore, if there is an accumulation of condensate in the bowl (1), it will drain out through the drain cock.

When pressure is applied inside the bowl:

When pressure is 0.1 MPa or more, the force of the piston ⑦ surpasses the force of the spring ⑥, and the piston goes up.

This pushes seal (1) up so that it creates a seal, and the inside of the bowl (1), is shut off from the outside air.

If there is no accumulation of condensate in the bowl (1) at this time, the float (2) will be pulled down by its own weight, causing the valve (4), which is connected to the lever (3), to seal the valve seat (5).

When there is an accumulation of condensate in the bowl:

The float (2) rises due to its own buoyancy and the seal at the valve seat (5) is interrupted. This allows the pressure inside the bowl (1) to enter the chamber (8). The result is that the

combined pressure inside the chamber (and the force of the spring (lowers the piston (). This causes the sealing action of the seal () to

be interrupted, and the accumulated condensate in the bowl ① drains out through the drain cock ①.

Turning the drain cock (1) manually counterclockwise lowers the piston $\overline{\mathcal{O}}$, and causes the seal created by the seal (1) to be interrupted, thus allowing the condensate to drain out.

• When pressure inside the bowl is released:

Even when pressure inside the bowl (1) is released, spring $(\widehat{6})$ keeps the piston $(\overline{7})$ in its upward position.

This keeps the seal created by the seal 0 in place; thus, the inside of the bowl 1 is shut off from the outside air.

Therefore, even if there is an accumulation of condensate in the bowl $(\ensuremath{\overline{1}}),$ it will not drain out.

When pressure is applied inside the bowl:

Even when pressure is applied inside the bowl (1), the combined force of the spring (6) and the pressure inside the bowl (1) keeps the piston (7) in its upward position.

This maintains the seal created by the seal 10 in place; thus, the inside of the bowl 1 is shut off from the outside air.

If there is no accumulation of condensate in the bowl (1) at this time, the float (2) will be pulled down by its own weight, causing the valve (4), which is connected to the lever (3), to seal the valve seat (5).

• When there is an accumulation of condensate in the bowl:

The float (2) rises due to its own buoyancy and the seal at the valve seat (5) is interrupted. This allows the pressure inside the bowl (1) to enter the chamber (8).

The result is that the pressure inside the chamber (8) surpasses the force of the spring (6) and pushes the piston downward.

This causes the sealing action of the seal 0 to be interrupted and the accumulated condensate in the bowl 1 drains out through the drain cock 1.

Turning the drain cock (1) manually counterclockwise lowers the piston (2), and causes the seal created by the seal (1) to be interrupted, thus allowing the condensate to drain out.

• When pressure inside the bowl is released:

Even when pressure inside the bowl ① is released, the weight of the float ② causes the valve ④, which is connected to the lever ③, to seal the valve seat ⑤. As a result, the inside of the bowl ① is shut off from the outside air. Therefore, even if there is an accumulation of

condensate in the bowl ①, it will not drain out.

• When pressure is applied inside the bowl:

Even when pressure is applied inside the bowl (1), the weight of the float (2) and the differential pressure that is applied to the valve (4) cause the valve (4) to seal the valve seat (5), and the outside air is shut off from the inside of the bowl (1).

• When there is an accumulation of condensate in the bowl:

The float 2 rises due to its own buoyancy and the seal at the valve seat 5 is interrupted.

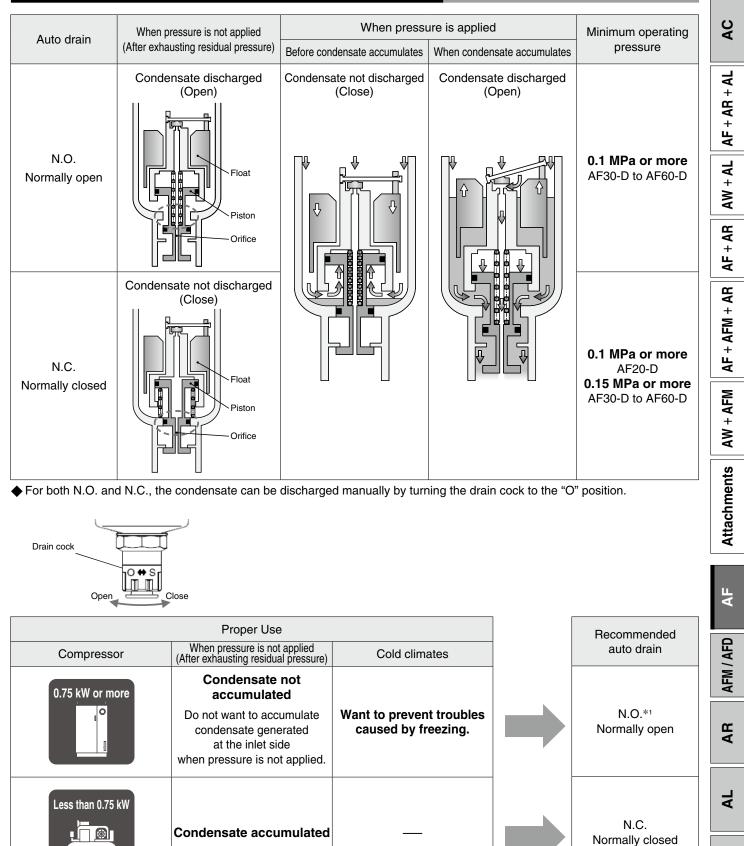
The condensate inside the bowl (1) drains out through the knob (6).

Turning the knob (6) manually counterclockwise lowers it and causes the sealing action of the valve seat (5) to be interrupted, which allows the condensate to drain out.



Air Filter AF20-D to AF60-D Series





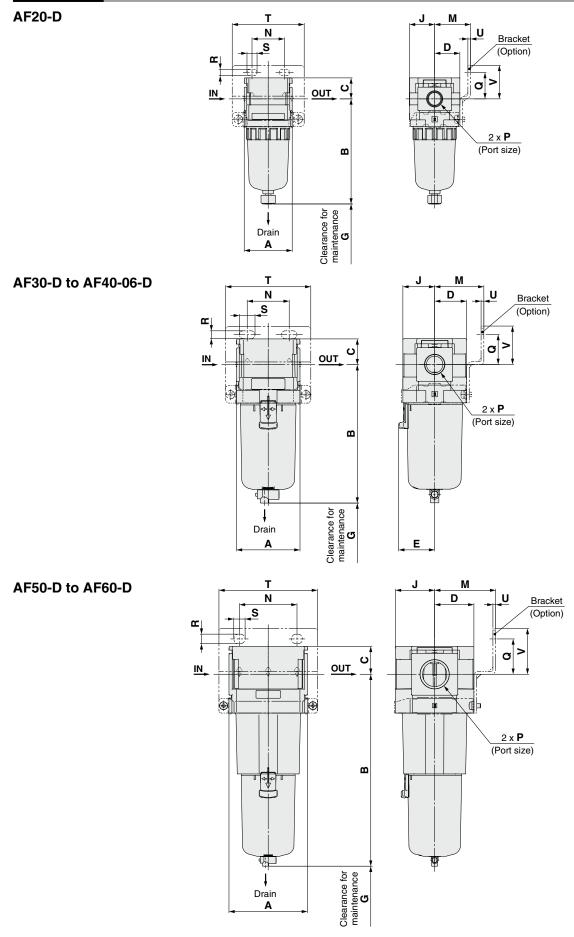
*1 For N.O. (Normally open) type, the condensate discharge passage is open when pressure is not applied. For this reason, the drain port is not closed completely in a compressor with a small supply amount (less than 0.75 kW) and the air will ceaselessly blow out.



₹

AF20-D to AF60-D Series

Dimensions



Air Filter AF20-D to AF60-D Series

	Optional specifications				Semi-standard				U,
Applicable		PC/PA	bowl	Meta	al bowl	Metal bowl v	vith level gauge	With	4
model	With auto drain	Drain cock with barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	element service indicator	
AF20-D	M5 × 0.8		Width across flats 14	n	Width across flats 14			5	+ AL AF + AR + AL
	N.O.: Black N.C.: Gray Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting	Barb fitting applicable tubing: T0604	Vidth across flats 17		Under the second		Under the second		AR AF + AR AW

									Optional specifications								
Model	Standard specifications							Bracket mount							With auto drain		
	Р	Α	В	С	D	Е	G	J	М	Ν	Q	R	S	Т	U	V	В
AF20-D	1/8, 1/4	40	87.6	17.5	21	—	25	21	30	27	22	5.4	8.4	60	2.3	28	104.9
AF30-D	1/4, 3/8	53	115.4	21.5	26.5	30	35	26.5	41	35	25	6.5	13	71	2.3	32	157.1
AF40-D	1/4, 3/8, 1/2	70	147.1	25.5	35.5	38.4	40	35.5	50	52	30	8.5	12.5	88	2.3	39	186.9
AF40-06-D	3/4	75	149.1	27	35.5	38.4	40	35.5	50	52	34	8.5	12.5	88	2.3	43	188.9
AF50-D	3/4, 1	90	220.1	32	45	—	30	45	70	66	40.5	11	13	113	3.2	52.5	259.9
AF60-D	1	95	234.1	32	45	—	30	45	70	66	40.5	11	13	113	3.2	52.5	273.9

			Serr	ni-standard	l specificat	ions			
Model	PC/P/	A bowl	Metal	bowl	Metal be level g	owl with gauge	With element		
Model	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	service	ndicator	
	В	В	В	В	В	В	Α	C1	
AF20-D	—	91.4	87.4	93.9	_	—	40	50.6	
AF30-D	123.9	122.2	117.8	122.3	137.8	142.3	53	54.3	
AF40-D	155.6	153.9	149.5	154	169.5	174	70	58.3	
AF40-06-D	157.6	155.9	151.5	156	171.5	176	—	—	
AF50-D	228.6	226.9	222.5	227	242.5	247	90	64.3	
AF60-D	242.6	240.9	236.5	241	256.5	261	90* ¹	64.3	

*1 For the type with an element service indicator, the A dimension differs from that of the standard specification.

AW

AF

Air Filter/AF20-D to AF60-D Made to Order

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



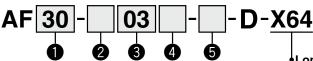
1Long Bowl

Drain capacity is greater than that of standard models.

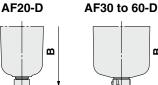
Applicable Models/Drain Capacity

Model	AF20-D	AF30-D	AF40-D	AF40-D AF40-06-D		AF60-D	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4 3/4, 1		
Drain capacity [cm3]	19	43		88			
B dimension [mm]*1	108.1	137.4	167.2	169.2	240.2	254.2	

*1 For polycarbonate bowls. Please contact SMC for other bowl materials.



Long bowl





Semi-standard Symbol Selection

Select one each for a to d.

· When more than one specification is required, indicate in alphanumeric order. Example) AF30-F03B-2JR-D-X64

								0		
				Symbol	Description			Body size)	
						20	30	40	50	60
				Nil	Rc					
2		Pipe	e thread type	Ν	NPT			•		
				F	G			•	•	
				+						
				01	1/8		—	—	—	—
				02	1/4			•	—	—
8			Port size	03	3/8				—	—
			FUITSIZE	04	1/2	—	—		—	—
				06	3/4		—			—
				10	1		—	_		
				+						
4		Ontic	on (Mounting)	Nil	Without mounting option			•		
9		Opiic		B *1	With bracket			•		\bullet
				+						
				Nil	Polycarbonate bowl			•		
				2	Metal bowl			•		
		а	Bowl ^{*2}	6	Nylon bowl					
				С	With bowl guard		—* ³	* ³	—* ³	* ³
				6C	With bowl guard (Nylon bowl)		*4	* ⁴	*4	— ^{*4}
	σ		1	+			1			
	dar			Nil	With drain cock					
6	tan	b	Drain port	J *5	Drain guide 1/8					_
	ni-s	~	Brainport		Drain guide 1/4		•			
	Semi-standard			W *6	Drain cock with barb fitting					
		_	1	+		ı	1	1		
		с	Flow direction	Nil	Flow direction: Left to right			•		
				R	Flow direction: Right to left					
				+			1	1		
		d	Unit	Nil	Unit on product label: MPa, °C		•			
		-	0.mt	Z *7	Unit on product label: psi, °F	0*8	0*8	0*8	0*8	0*8

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.

*2 Refer to chemical data on page 83 for chemical resistance of the bowl.

*3 A bowl guard is provided as standard equipment (polycarbonate).
 *4 A bowl guard is provided as standard equipment (nylon).

*5 Without a valve function. The mounting screws are the same as the thread of 2

*6 The combination of metal bowl 2 is not available.

*7 For the 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.) *8 O: For the pipe thread type: NPT only



Air Filter/AF20-D to AF60-D Made to Order

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



19473-0-14 MCARD. 184

2 Clean Series

For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.



Clean Series

3 Copper, Fluorine and Silicone-free + Low Particle Generation

For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

21 - Standard model no.

Copper, fluorine and silicone-free + Low particle generation

AL

AV



AF-D 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.smcworld.com

Design / Selection

\land Warning

1. The bowl material of the standard air filter is 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.

Chemical resistance of polycarbonate or nylon bowl

			Material		
Туре	Chemical name	Application examples	Polycar- bonate	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0	
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	×	Δ	
Chlorine solvents	Printing ink			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	
O: Essential	ly safe △: Some effect	ts may occur. X: Effe	ects will o	ccur.	

○: Essentially safe △: Some effects may occur. ×: Effects will occur.
 * When the above factors are present, or there is some doubt, use a metal bowl for safety.

The display window material for the semi-standard type with an element service indicator is nylon.

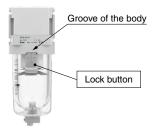
Maintenance

A Warning

Mounting / Adjustment

\land Caution

1. When the bowl is installed on the air filter (AF30-D to AF60-D), 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.



Handling

A Caution

- The element service indicator (Semi-standard: L) is used to check the pressure differential between the IN and OUT sides. When operating at a flow rate with a pressure differential exceeding 0.025 MPa, the element service indicator may operate even when the element is in its initial state.
- **2.** For models with an element service indicator, adjust the flow rate in the direction that increases the flow rate.

If the designated flow rate is exceeded, reset the flow rate to zero and readjust it until the designated flow rate is reached.

3. For models with an element service indicator, as the element becomes more clogged, the indicator will display an increasing level of red. Be sure to replace the element before the level of red reaches the top of the indicator.

^{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.

Modular Type Mist Separator/Micro Mist Separator **AFN/AFD Series**

Mist Separator AFM Series	Model	Port size	Filtration [µm]	Options
i i	AFM20-D	1/8, 1/4		
And a diama	AFM30-D	1/4, 3/8		Bracket
	AFM40-D	1/4, 3/8, 1/2	0.3	Float type auto drain
p. 85 to 91	AFM40-06-D	3/4	-	
Micro Mist Separator AFD Series	AFD20-D	1/8, 1/4		
	AFD30-D	1/4, 3/8		Bracket
	AFD40-D	1/4, 3/8, 1/2	0.01	Float type auto drain
p. 85 to 91	AFD40-06-D	3/4		

AFM / AFD

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				M2	tor 20-D to AFM40 Separator	-D			
Sym Mist					O-D to AFD40- How to Order	D		-M30-D	AFD30-D
			30 - 30 - 0 Ø			tion and Se elect one eac Vhen more tha a alphanumeri ample) AFM3	h for a to g . In one specif c order.	fication is rec	I Selection
	_	<u> </u>		Symbol	Description			1 Body size	
							20	30	40
0		Pip	be thread type	Nil N F	Rc NPT G		•	•	•
				+					
8			Port size	01 02 03 04 06 +	1/8 1/4 3/8 1/2 3/4		• • 		
				Nil	Without mounting option		•		
	_	а	Mounting	B *1	With bracket		•		•
4	Option	b	Float type auto drain* ²	+ Nil C*3 D*4	Without auto drain N.C. (Normally closed) Drain port is closed when pressure is n N.O. (Normally open) Drain port is open when pressure is n		•	•	•
		c	Bowl ^{*5}	+ Nil 2 6 8 C 6C	Polycarbonate bowl Metal bowl Nylon bowl Metal bowl with level gauge With bowl guard With bowl guard (Nylon bowl)		• • • • •	• •	
	dard	d	Indicator	+ Nil L	Without indicator With element service indicator* ¹⁴		•	•	● ●*12
6	Semi-standard	e	Drain port*8	+ Nil J*9 W*10	With drain cock Drain guide 1/8 Drain guide 1/4 Drain cock with barb fitting		• • 	• • •	• • • •
		f	Flow direction	+ Nil R	Flow direction: Left to right Flow direction: Right to left		•	•	•
		g	Unit	+ Nil Z* ¹¹	Unit on product label: MPa, °C Unit on product label: psi, °F duct but does not come assembled. The assembly consists of 2 types		● ○* ¹³	● ○* ¹³	

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the blacket and 2 mounting screws.
*2 The auto drain port is \$010 One-touch fitting (**2** Pipe thread type: Rc, G) or \$3/8" One-touch fitting (**2** Pipe thread type: NPT)
*3 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.
*4 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. *5 Refer to chemical data on page 91 for chemical resistance of the bowl.

*5 Heller to chemical data on page 5 nor chemical resistance of the bow.
*6 A bowl guard is provided as standard equipment (polycarbonate).
*7 A bowl guard is provided as standard equipment (nylon).
*8 The combination of float type auto drain C and D is not available.
*9 Without a valve function. The mounting screws are the same as the thread of ②.

*10 The combination of metal bowl 2 and 8 is not available.
*11 For the 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.)
*12 Excludes port size "06"

*13 O: For the pipe thread type: NPT only

*14 A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.



Mist Separator AFM20-D to AFM40-D Series Micro Mist Separator AFD20-D to AFD40-D Series

Standard Specifications

Mo	del		AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D	AFM40-06-D/AFD40-06-I			
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4			
Fluid			Air						
Ambient and fluid t	emperature	es	-5 to 60°C (No freezing)						
Proof pressure	-			1.5	MPa				
Max. operating pres	ssure			1.0	MPa				
Min. operating pres	sure			0.05	MPa				
Auto drain minimum	N.C.		0.1 MPa		0.15 MPa				
operating pressure	N.O.		—		0.1 MPa				
Max. flow capacity*1		[AFM]	200 L/min (ANR)	450 L/min (ANR)	1100 L/min (ANR)				
wax. now capacity	-	[AFD]	120 L/min (ANR)	240 L/min (ANR)	600 L/min (ANR)				
Nominal filtration ra	atina*2	[AFM]	0.3 μm (99.9% filtered particle size)						
	ating	[AFD]	0.01 μm (99.9% filtered particle size)						
Outlet side oil mist		[AFM]	Max. 1.0 mg/m³ (≈ 0.8 ppm)						
concentration*3, *4		[AFD]	Max. 0.1 mg/m ³ (Before saturated with oil 0.01 mg/m ³ or less \approx 0.008 ppm)						
Compressed air pu	rity	[AFM]	ISO 8573-1:2010 [3 : 7 : 3]*6						
class*5		[AFD]		ISO 8573-1:20	10 [1 : 7 : 2]* ⁷				
Drain capacity			8 cm ³	25 cm ³	45	cm ³			
Bowl material				Polyca	rbonate				
Bowl guard			Semi-standard (Steel) Standard (Polycarbonate)						
Weight			0.10 kg	0.18 kg	0.37 kg	0.40 kg			

The maximum flow capacity varies depending on the inlet pressure. Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side.

For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable *2

*3 The outlet side oil mist concentration for the following conditions in accordance with [Test condition:

Bowl Assembly/Part Nos

Bowl	Drain discharge	Drain nort	Other		Мо	del
material	mechanism	Drain port	Other	AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D AFM40-06-D/AFD40-06-D
		With drain cock	—	C2SF-D	—	<u> </u>
		With drain cock	With bowl guard	C2SF-C-D	C3SF-D	C4SF-D
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D
Polycarbonate		With drain guide	—	C2SF□-J-D	—	—
		(without valve function)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D	C4SF□-J-D
	Automotio*1	Normally closed (N.C.)	—	AD27-D	—	—
	Automatic*1 (Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-C-D	AD37🗆-D	AD47□-D
		Normally open (N.O.)	With bowl guard	—	AD38□-D	AD48□-D
		With drain cock	—	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
Nylon		With drain guide	—	C2SF□-6J-A	—	_
NyION		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF⊡-6J-A
	Automatic*1	Normally closed (N.C.)	—	AD27-6-A	—	—
	(Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A	AD47□-6-A
	(Auto drain)	Normally open (N.O.)	With bowl guard	—	AD38□-6-A	AD48□-6-A
		With drain cock	—	C2SF-2-A	C3SF-2-A	C4SF-2-A
	Manual	With drain COCK	With level gauge		C3LF-8-A	C4LF-8-A
	Ivianuai	With drain guide	—	C2SF□-2J-A	C3SF□-2J-A	C4SF⊡-2J-A
Metal		(without valve function)	With level gauge	—	C3LF□-8J-A	C4LF□-8J-A
ivicial		Normally closed (N.C.)		AD27-2-A	AD37□-2-A	AD47□-2-A
	Automatic*1	Normany Closed (N.C.)	With level gauge	—	AD37□-8-A	AD47□-8-A
	(Auto drain)	Normally open (N.O.)		—	AD38□-2-A	AD48□-2-A
		Normany open (N.O.)	With level gauge	_	AD38□-8-A	AD48□-8-A

*1 The bowl assembly comes with a bowl seal. □ in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain). No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8") Please contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

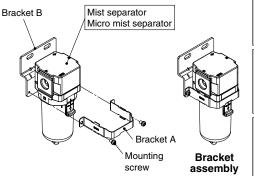
	Model							
Optional specifications	AFM20-D AFD20-D	AFM30-D AFD30-D	AFM40-D AFD40-D	AFM40-06-D AFD40-06-D				
Bracket assembly ^{*1}	AF24P-070AS	AF34P-070AS	AF44P-070AS	AF49P-070AS				
Auto drain	Refer to "Bowl Assembly/Part Nos."							

*1 The assembly consists of a bracket A/B and 2 mounting screws.

Replacement Parts

		Part no.							
Des	cription	AFM20-D AFD20-D	AFM30-D AFD30-D	AFM40-D AFD40-D	AFM40-06-D AFD40-06-D				
Element	AFM20 to 40-D	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS					
assembly	AFD20 to 40-D	AFD20P-060AS	AFD30P-060AS	AFD40F	P-060AS				
Bowl seal		C2SFP-260S	C32FP-260S	C42FP-260S					
Bowl asse	embly ^{*1, *2}	Refer to "Bowl Assembly/Part Nos."							

*1 The bowl assembly comes with a bowl seal.
 *2 Please contact SMC separately for psi and °F unit display specifications.



₹

AB

AF

AFM / AFD



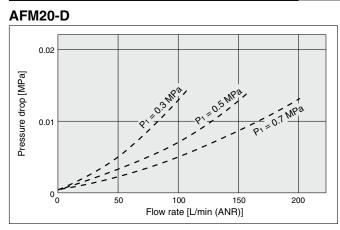
and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable *4 The bowl seal and other O-rings are slightly lubricated.

*4 The bow seal and other O-hings are slightly lubricated.
*5 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes. For details on this standard, refer to page 131.
*6 The compressed air quality class on the inlet side is [6 : 8 : 4].
*7 The compressed air quality class on the inlet side is [3 : 7 : 3].

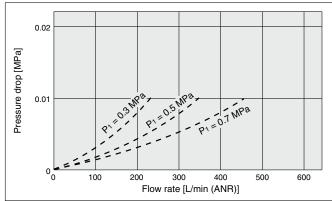
AFM20-D to AFM40-D Series AFD20-D to AFD40-D Series

Flow Rate Characteristics (Representative values)

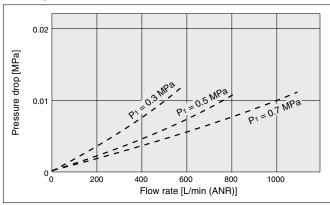
- - - - Initial state

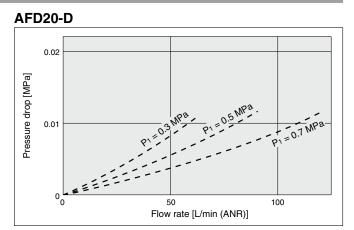


AFM30-D

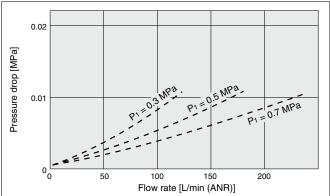




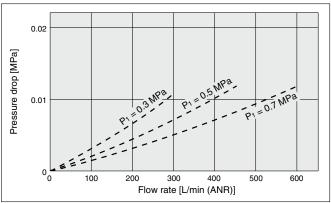




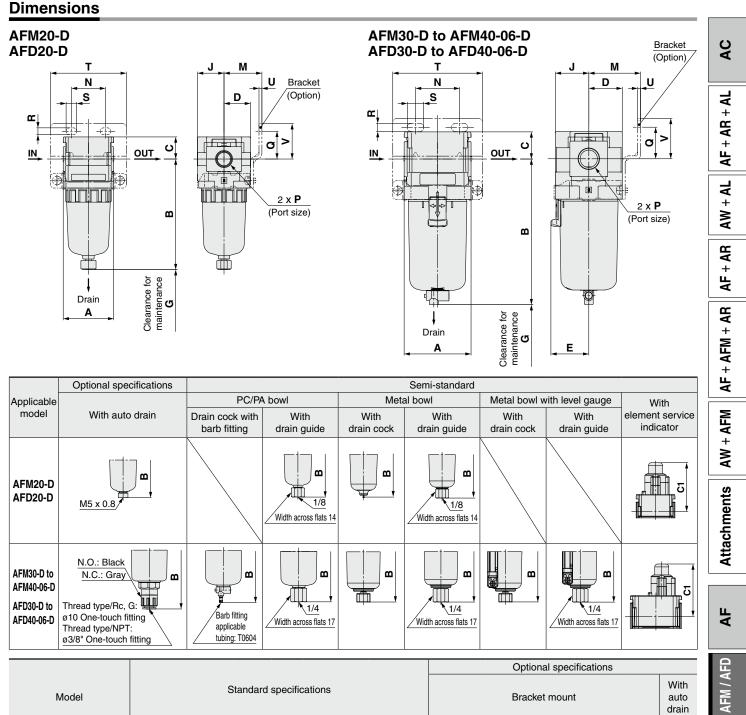
AFD30-D







Mist Separator AFM20-D to AFM40-D Series Micro Mist Separator AFD20-D to AFD40-D Series



									Optional specifications									
Model	Standard specifications							Bracket mount							With auto drain			
	Р	Α	В	С	D	E	G	J	М	N	Q	R	S	Т	U	V	В	
AFM20-D/AFD20-D	1/8, 1/4	40	87.6	17.5	21	—	45	21	30	27	22	5.4	8.4	60	2.3	28	104.9	
AFM30-D/AFD30-D	1/4, 3/8	53	115.4	21.5	26.5	30	50	26.5	41	35	25	6.5	13	71	2.3	32	157.1	
AFM40-D/AFD40-D	1/4, 3/8, 1/2	70	147.1	25.5	35.5	38.4	75	35.5	50	52	30	8.5	12.5	88	2.3	39	186.9	
AFM40-06-D/AFD40-06-D	3/4	75	149.1	27	35.5	38.4	75	35.5	50	52	34	8.5	12.5	88	2.3	43	188.9	

SMC

	Semi-standard specifications										
Model	PC/PA bowl		Metal	bowl	Metal b level g	With element					
Woder	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	service indicator				
	В	В	В	В	В	В	C1				
AFM20-D/AFD20-D	—	91.4	87.4	93.9	—	—	50.6				
AFM30-D/AFD30-D	123.9	122.2	117.8	122.3	137.8	142.3	54.3				
AFM40-D/AFD40-D	155.6	153.9	149.5	154	169.5	174	58.3				
AFM40-06-D/AFD40-06-D	157.6	155.9	151.5	156	171.5	176	_				



AR

Mist Separator/AFM20-D to AFM40-06-D Micro Mist Separator/AFD20-D to AFD40-06-D Made to Order

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



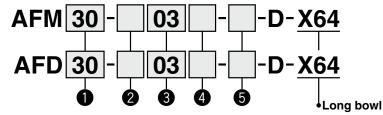
1 Long Bowl

Drain capacity is greater than that of standard models.

Applicable Models/Drain Capacity

Model	AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D	AFM40-06-D/AFD40-06-D	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	
Drain capacity [cm ³]	19	43	8	88	
B dimension [mm]*1	108.1	137.4	167.2	169.2	

*1 For polycarbonate bowls. Please contact SMC for other bowl materials.



AFM20-D AFD20-D

AFM30 to 40-06-D AFD30 to 40-06-D





Semi-standard Symbol Selection

Select one each for a to d.

When more than one specification is required, indicate in alphanumeric order. Example) AFM30-F03B-2JR-D-X64

							1	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc		•	•
2		Pipe	e thread type	Ν	NPT		•	•
				F	G	•	•	•
				+				
				01	1/8		—	—
			02	1/4		•	•	
8			Port size	03	3/8	_	•	•
-				04	1/2	—	—	•
				06	3/4	_	—	•
				+				
	4 Option (Mounting)		(Mounting)	Nil	Without mounting option	•	•	•
4			B *1	With bracket		•	•	
				+				
			Bowl ^{*2}	Nil	Polycarbonate bowl		•	•
				2	Metal bowl	•	•	•
		а		6	Nylon bowl		•	•
				С	With bowl guard		*3	* ³
				6C	With bowl guard (Nylon bowl)		*4	*4
	5			+				
	dar			Nil	With drain cock		•	•
6	an	b	Drain port	J *5	Drain guide 1/8		—	_
9	i-st	D	Drain port	-	Drain guide 1/4		•	•
	Semi-standard			W *6	Drain cock with barb fitting	_		\bullet
				+				
		с	Flow direction	Nil	Flow direction: Left to right	•	•	•
		C		R	Flow direction: Right to left		•	●
				+				
		d	Unit	Nil	Unit on product label: MPa, °C	•	•	•
		u	Onit	Z *7	Unit on product label: psi, °F	○*8	○*8	○*8

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
*2 Refer to chemical data on page 91 for chemical resistance of the bowl.

*3 A bowl guard is provided as standard equipment (polycarbonate).

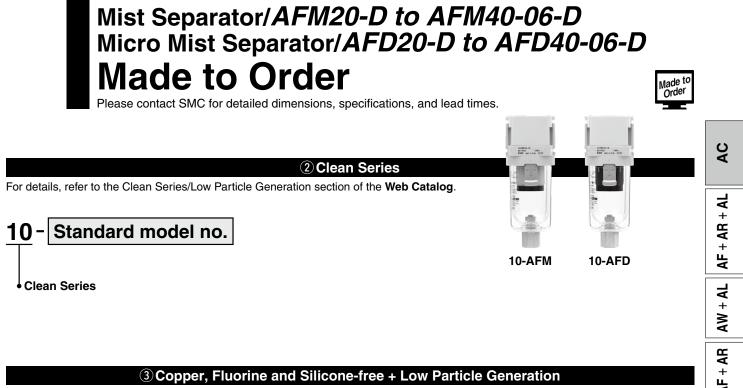
*4 A bowl guard is provided as standard equipment (nylon).

*5 Without a valve function. The mounting screws are the same as the thread of ②.
 *6 The combination of metal bowl 2 is not available.

*7 For the 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.)

*8 \bigcirc : For the pipe thread type: NPT only





For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

21 - Standard model no.

Copper, Fluorine and Silicone-free + Low Particle Generation

AV



AFM-D/AFD-D 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.smcworld.com

Design / Selection

\land Warning

1. The bowl material of the standard mist separator and micro mist separator is 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.

			Material		
Туре	Chemical name	Application examples	Polycar- bonate	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0	
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	×	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	

○: Essentially safe △: Some effects may occur. ×: Effects will occur.
 * When the above factors are present, or there is some doubt, use a metal bowl for safety.

 The display window material for the semi-standard type with an element service indicator is nylon.

Air Supply

A Caution

- **1.** Install an air filter (AF series) as a pre-filter on the inlet side of the mist separator to prevent premature clogging.
- **2.** Install a mist separator (AFM series) as a pre-filter on the inlet side of the micro mist separator to prevent premature clogging.
- **3.** Do not install on the inlet side of the dryer as this can cause premature clogging of the element.

Maintenance

A Warning

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

Mounting / Adjustment

A Caution

 When the bowl is installed on the mist separator (AFM30-D/AFM40-D), or micro mist separator (AFD30-D/AFD40-D), 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.



Design

A Caution

 Design the system so that the mist separator or micro mist separator is installed in a pulsation-free location. The difference between internal and external pressure inside the element should be kept within 0.1 MPa, as exceeding this value could cause damage.

Selection

A Caution

- 1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
- 2. Do not use in a low pressure application (such as a blower). An F.R.L. unit has its own minimum operating pressure depending on the equipment and is designed specifically to function with compressed air. If used below the minimum operating pressure, a loss of performance and malfunction can occur. Please contact SMC if an application under such conditions cannot be avoided.

Handling

▲ Caution

- The element service indicator (Semi-standard: L) is used to check the pressure differential between the IN and OUT sides. When operating at a flow rate with a pressure differential exceeding 0.025 MPa, the element service indicator may operate even when the element is in its initial state.
- 2. For models with an element service indicator, adjust the flow rate in the direction that increases the flow rate.
- If the designated flow rate is exceeded, reset the flow rate to zero and readjust it until the designated flow rate is reached.
- **3.** For models with an element service indicator, as the element becomes more clogged, the indicator will display an increasing level of red. Be sure to replace the element before the level of red reaches the top of the indicator.



Modular Type Regulator **AR Series**

Regulator AR Series	Model	Port size	Set pressure	Options
	AR20(K)-D	1/8, 1/4		Bracket Set nut
	AR30(K)-D	1/4, 3/8		(for panel mount) Square embedded type pressure gauge
Già Mon-turi- Giale Giale Martina Trans Martina Trans Mart	AR40(K)-D	1/4, 3/8, 1/2	0.05 to 0.85 MPa	Right angle square type pressure gauge
	AR40(K)-06-D	3/4	0.02 to 0.2 MPa	Digital pressure switch Round type pressure gauge
	AR50(K)-D	3/4, 1		Bracket Square embedded type pressure gauge
p. 93 to 103	AR60(K)-D	1		Digital pressure switch Round type pressure gauge

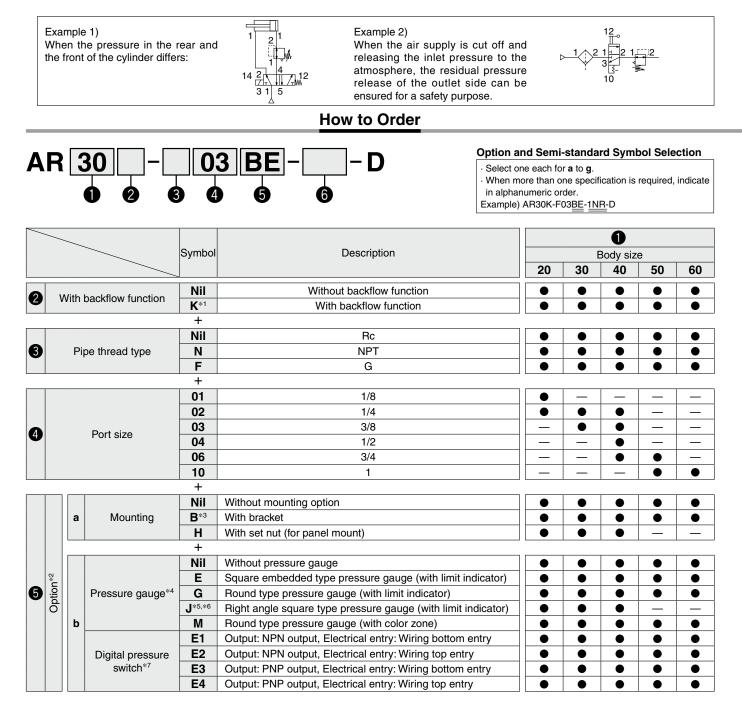
AW

AF





\cdot 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.



Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series



AR30-D

						-	1		
			Symbol	Description		E	Body size	Э	
					20	30	40	50	60
		Cat processes	Nil	0.05 to 0.85 MPa setting				•	
	С	Set pressure*8	1	0.02 to 0.2 MPa setting	•			•	\bullet
			+						
	d	Exhaust	Nil	Relieving type				•	\bullet
	u	mechanism	Ν	Non-relieving type	•			•	\bullet
pi			+						
ndå	е	Flow direction	Nil	Flow direction: Left to right				•	\bullet
Semi-standard	e	Flow direction	R	Flow direction: Right to left				•	\bullet
<u> </u>			+						
မီ		Knob	Nil	Downward	•			•	•
		KIIOD	Y	Upward				•	\bullet
			+						
			Nil	Unit on product label: MPa, Pressure gauge in SI units: MPa	•			•	\bullet
	g	Unit	Z *9	Unit on product label: psi, Pressure gauge: MPa/psi dual scale	O*11	O*11	O*11	O*11	O*11
			ZA *10	Digital pressure switch: With unit selection function	△*12	△*12	△*12	△*12	\triangle^{*12}

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.

*2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.

*3 The assembly consists of a bracket and set nuts (applicable to the AR20(K)-D to AR40(K)-D). For the AR50(K)-D and AR60(K)-D, the assembly consists of 2 types of the bracket and 2 mounting screws.

*4 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

*5 Cannot be selected for the type with a set nut (option "H")

 *6 The direction the pressure gauge scale plate faces is from the knob side.
 *7 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring top entry" for the electrical entry. (Select "wiring bottom entry" when the semi-standard Y is chosen simultaneously.)

*8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range. *9 For the 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.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially. *10 For options: E1, E2, E3, E4

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*11 O: For the pipe thread type: NPT only

*12 \triangle : Select with options: E1, E2, E3, E4.

AC

A₹

AR20-D to AR60-D Series AR20K-D to AR60K-D Series

Standard Specifications

1/4, 3/8	A	3/4 /8 .ir	3/4, 1	1
	A	vir		
	E 1 - 0000 (
	-5 to 60°C (No freezing)		
	1.5	MPa		
	1.0	MPa		
	0.05 to 0).85 MPa		
	Relievi	ng type		
0.27 kg	0.48 kg	0.51 kg	1.13 kg	1.25 kg
).27 kg	1.0 0.05 to 0 Relievi	1.5 MPa 1.0 MPa 0.05 to 0.85 MPa Relieving type 0.27 kg 0.48 kg	1.0 MPa 0.05 to 0.85 MPa Relieving type

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

*2 -5 to 50°C for the products with the digital pressure switch

Option/Part Nos.

0	ntional analifias	tiono			Мс	del					
Ľ	Optional specifica	llions	AR20(K)-D	AR30(K)-D	AR40(K)-D	AR40(K)-06-D	AR50(K)-D	AR60(K)-D			
Bracket as	sembly ^{*1}		AR23P-270AS	AR33P-270AS	AR43P	-270AS	AR54P	-270AS			
Set nut			AR23P-260S	AR33P-260S	AR43F	P-260S	*2				
		Standard	G36-1	0-□01		G46-1	-10-🗆01				
	Round type	0.02 to 0.2 MPa setting	G36-4	4-⊡01		G46-4	4-⊡01				
	Round type	Standard	G36-10)-□01-L		G46-10)-□01-L				
Pressure	(with color zone)	0.02 to 0.2 MPa setting	G36-4	-□01-L	G46-4-	ŀ-□01-L					
gauge*3	Square	Standard		GC3-10A	ressure gauge co	cover only)]					
	embedded type ^{*4}	0.02 to 0.2 MPa setting		GC3-4AS	ver only)]						
	Dight ongle	Standard		GC3-10AS-J-D [0		—					
	Right angle square type ^{*5}	0.02 to 0.2 MPa setting		GC3-4AS-J-D [(GC3-4AS-JA-D]		-	_			
		NPN output, Wiring bottom entry		ISE35-N-25-N	/ILA-X523 [ISE35	5-N-25-M (Switch	body only)]*6				
Digital pro	ssure switch	NPN output, Wiring top entry		ISE35-R-25-N	/ILA-X523 [ISE35	5-R-25-M (Switch	body only)]*6				
Digital pre	Soure Switch	PNP output, Wiring bottom entry		ISE35-N-65-N	/ILA-X523 [ISE35	5-N-65-M (Switch	body only)]*6				
		PNP output, Wiring top entry		ISE35-R-65-N	-65-MLA-X523 [ISE35-R-65-M (Switch body only)]*6						

*1 The assembly consists of a bracket and set nuts. For the AR50(K)-D and AR60(K)-D, the assembly consists of a bracket A/B and 2 mounting screws.

*2 Please contact SMC regarding the set nuts for the AR50(K)-D and AR60(K)-D.

*3 □ in part numbers for a round pressure gauge indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the pressure gauge supply for both MPa and psi unit specifications.
 *4 Including one O-ring and 2 mounting screws. []: Pressure gauge cover only

*5 The right angle square type pressure gauge only includes the pressure gauge body. The pressure gauge body comes with 1 O-ring and 2 mounting screws.

In addition, the part number in brackets includes a pressure gauge with a right angle adapter as well as an adapter, lock pin, 1 O-ring, and 2 mounting screws.

*6 In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screws (2 pcs.) are attached.
[]: Switch body only (For the digital pressure switch specifications, refer to page 130.)

AR20(K)-D to AR40(K)-06-D

AR50(K)-D/AR60(K)-D Set nut Regulator Bracket Bracket B Regulator Bracket A Bracket Bracket Mounting screw assembly assembly

Replacement Parts

Descr	intion			Par	t no.						
Desci	iption	AR20(K)-D	AR30(K)-D	AR40(K)-D	AR40(K)-06-D	AR50(K)-D	AR60(K)-D				
Valve assemb	bly	AR24P-060AS	AR34P-060AS	AR44P-060AS	AR49P-060AS	AR54P-060AS	AR64P-060AS				
Diaphragm	Relieving type	AR24P-150AS	AR34P-150AS	AR44P	AR54P	AR54P-150AS					
assembly	Non-relieving type	AR24P-150AS-N	AR34P-150AS-N	AR44P-1	150AS-N	AR54P-150AS-N					
Valve guide a	ssembly	AR24P-050AS	AR34P-050AS AR44P-050AS AR54P-050AS								
Check valve a	assembly*1			AR24KF	P-020AS						

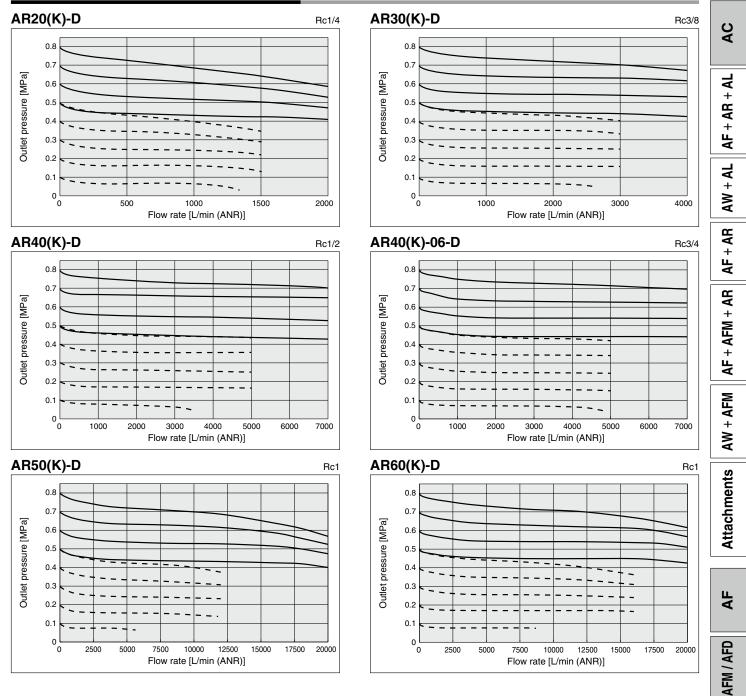
*1 The check valve assembly is applicable for a regulator with backflow function (AR20K-D to AR60K-D) only. The assembly consists of a check valve cover, check valve body assembly, and 2 mounting screws.



Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series

Flow Rate Characteristics (Representative values)

Inlet pressure: 1.0 MPa
 Inlet pressure: 0.7 MPa



AR

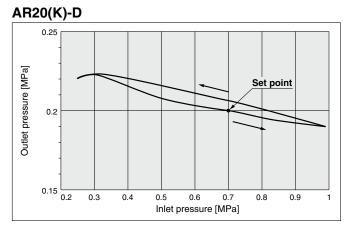
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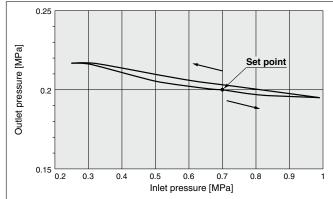
AR20-D to AR60-D Series AR20K-D to AR60K-D Series

Pressure Characteristics (Representative values)

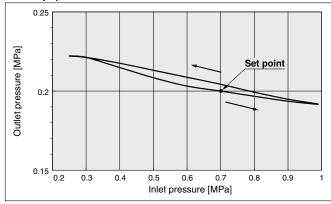
Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)

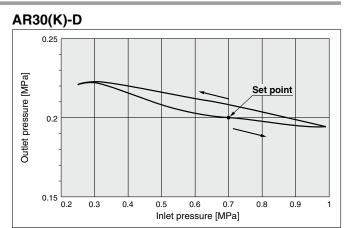




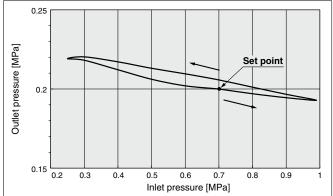




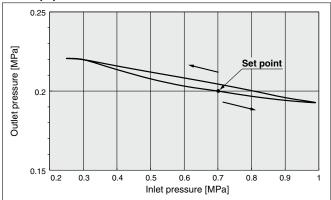






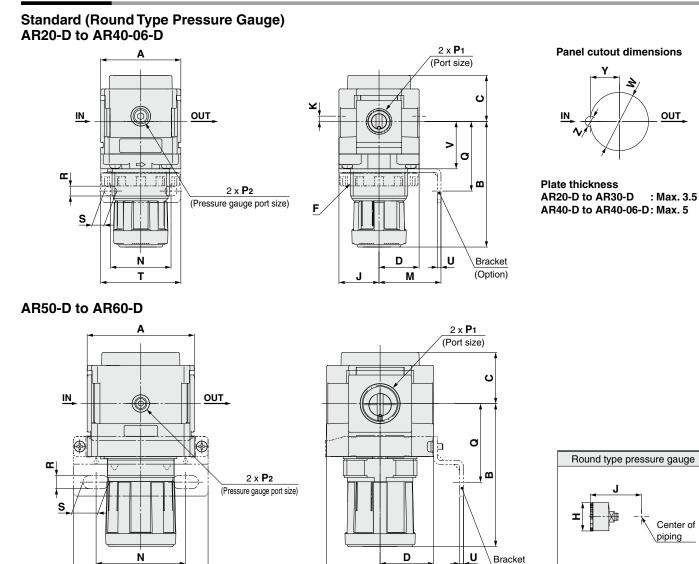






Regulator AR20-D to AR60-D Series Regulator with Backflow Function **AR20K-D to AR60K-D Series**

Dimensions



											Op	otional spe	ecificatio	ons	
Model			ŝ	Standard	specific		Round pressure		l type gauge ndard: Z)						
	P1 P2 A B*1 C D F J K										J	н	J	Н	J
AR20-D	1/8, 1/4	1/8	40	66.8	26.5	21	M28 x 1	21	2	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5
AR30-D	1/4, 3/8	1/8	53	86.5	30.5	26.5	M38 x 1.5	26.5	3.5	ø37.5	63	ø37.5	64	ø37.5	64
AR40-D	1/4, 3/8, 1/2	1/8	70	91.5	35.5	35.5	M42 x 1.5	35.5	_	ø42.5	73	ø42.5	73	ø42.5	73
AR40-06-D	3/4	1/8	75	93	35.5	35.5	M42 x 1.5	35.5	—	ø42.5	73	ø42.5	73	ø42.5	73
AR50-D	3/4, 1	1/8	90	125	43	45	_	45	—	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5
AR60-D	1	1/8	95	155	45	45	—	45	—	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5

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(Option)

					Optiona	al specifi	ications				
Model			Bra	acket mo	ount				Panel	mount	
	М	N	Q	R	S	Т	V	w	Y	Z	
AR20-D	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6
AR30-D	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7
AR40-D	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7
AR40-06-D	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7
AR50-D	70	75	66	11	22	113	3.2	—	—	—	—
AR60-D	70	75	66	11	22	113	3.2	_		_	_

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

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AW + AL AF + AF + AL

AF + AR

AF + AFM + AR

Attachments AW + AFM

AF

AFM / AFD

AR

AL

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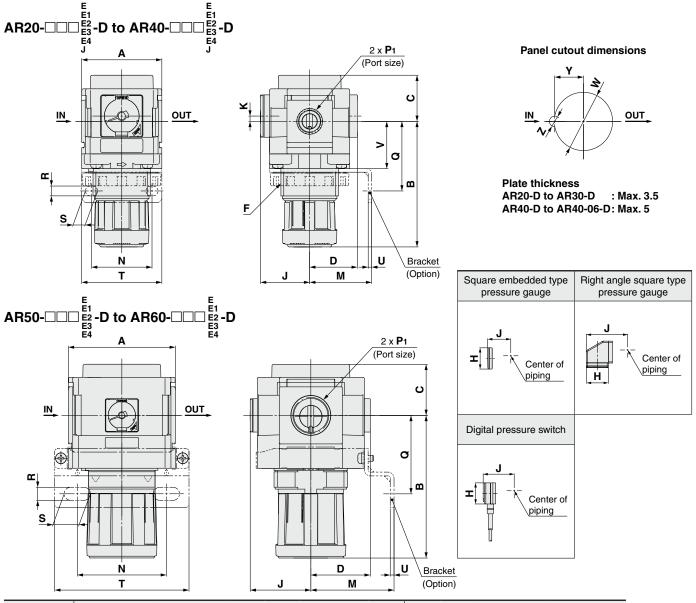
Center of piping

OUT

AR20-D to AR60-D Series AR20K-D to AR60K-D Series

Dimensions

Standard (Square Embedded Type Pressure Gauge, Right Angle Square Type Pressure Gauge, Digital Pressure Switch)



									O	otional s	pecificat	ions		
Model		5	Standard	specific	ations				mbedded sure gauge	Right and type press	le square sure gauge			
	P 1	A	B *1	С	D	F	K	Н	J	Н	J	Н	J	
AR20-D	1/8, 1/4	40	66.8	26.5	26	M28 x 1	2	□28	27	□28	54.3	□27.8	37.5	
AR30-D	1/4, 3/8	53	86.5	30.5	31.5	M38 x 1.5	3.5	□28	32.5	□28	59.8	□27.8	43	
AR40-D	1/4, 3/8, 1/2	70	91.5	35.5	40.5	M42 x 1.5	—	□28	41.5	□28	68.8	□27.8	52	
AR40-06-D	3/4	75	93	35.5	40.5	M42 x 1.5	—	□28	41.5	□28	68.8	□27.8	52	
AR50-D	3/4, 1	90	125	43	50	_	—	□28	51	—	—	□27.8	61.5	
AR60-D	1	95	155	45	50		—	□28	51	—	—	□27.8	61.5	

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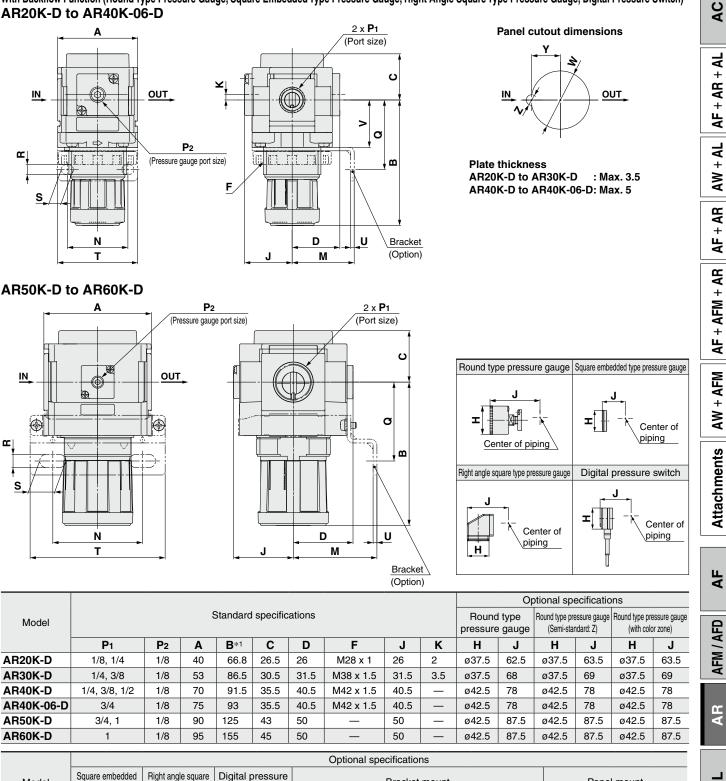
					Optiona	al specifi	cations				
Model			Bra	acket mo	unt				Panel	mount	
	М	N	Q	R	S	Т	U	V	W	Y	Z
AR20-D	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6
AR30-D	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7
AR40-D	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7
AR40-06-D	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7
AR50-D	70	75	66	11	22	113	3.2	_	_	_	_
AR60-D	70	75	66	11	22	113	3.2	—	—	—	—

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

Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series

Dimensions

With Backflow Function (Round Type Pressure Gauge, Square Embedded Type Pressure Gauge, Right Angle Square Type Pressure Gauge, Digital Pressure Switch) AR20K-D to AR40K-06-D



	Model		mbedded sure gauge	Right and type press	gle square sure gauge	Digital p swit		Bracket mount						Panel mount				Ì	
		Н	J	Н	J	Н	J	М	N	Q	R	S	Т	U	V	W	Y	Z	
ŀ	AR20K-D	□28	27	□28	54.3	□27.8	37.5	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6	Ē
ŀ	AR30K-D	□28	32.5	□28	59.8	□27.8	43	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7	
4	AR40K-D	□28	41.5	□28	68.8	□27.8	52	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	
ŀ	AR40K-06-D	□28	41.5	□28	68.8	□27.8	52	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7	
1	AR50K-D	□28	51	—	—	□27.8	61.5	70	75	66	11	22	113	3.2	—	—	—	—	_
ŀ	AR60K-D	□28	51	—		□27.8	61.5	70	75	66	11	22	113	3.2		—	_	—	

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

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Regulator/AR20-D to AR60-D Regulator with Backflow Function/AR20K-D to AR60K-D Made to Order

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



10.4 MPa Setting

The setting specification is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

Specifications

Made-to-order part no.	-X406
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 Models

Model AR20(K)-D		AR20(K)-D	AR30	(K)-D	AR40(K)-D	AR40(K)-06-D	Α	R50(K)-D	A	R60(K)-	D	
Port size 1/8, 1/4		1/8, 1/4 1/4, 3/8 1/4, 3/8, 1/2 3/4		3/4		3/4, 1		1				
٩R	3		03	-	-D-	X406	ting	Option and · Select one · When mor indicate in Example) A	e each fo re than o alphabe	r a to f . ne specifi tical orde	cation is i	
<u> </u>										0		
			Symbol		Descrip	tion				Body size		
								20	30	40	50	60
2	With I	backflow function	Nil		Without backflo							
7	vviuii	Jacknow runction	K *1		With backflow	v function						
			+								-	
3 Pipe thread type		Nil		Rc NPT				-		•		
		F		G						•		
			+		u				-		-	
			01		1/8				_	_	_	_
			02	1/4					•	•	_	- 1
		Dort oizo	03	3/8					•	•	_	- 1
4 Port size		04	1/2					_	•	—		
		06		3/4				—			-	
			10		1				—	-	•	
			+									
		a Mounting	Nil Wit	nout mounting	option				•	•	•	•
	a			n bracket n set nut (for p	anal maunt)				•	•	•	•
				i set nut (ior p	anei mount)							
				nout pressure	naude				•		•	
N *						ge (with limit indicator)			•	•	ě	Ĭ
tion (Pressure gauge*4			ure gauge (with lim				•	•	•	•
Option*2					~ ~ (uge (with limit indicator)			•	•	_	_
	b				ure gauge (with col				•	•	•	•
			E1 Out	put: NPN outp	ut, Electrical entry:	Wiring bottom entry			•	•	•	•
		Digital pressure	E2 Out	put: NPN outp	ut, Electrical entry:	Wiring top entry						
		switch*7				Wiring bottom entry			•		•	•
				put: PNP outp	ut, Electrical entry:	Wiring top entry						
_			+						-		-	-
	c	Exhaust mechanism		eving type							•	
			N Nor	-relieving type					•		•	
				v direction: Le	t to right						•	
ard	d	Flow direction		v direction: Le								
Semi-standard			+						-			
-sta				vnward					•			
emi	e	Knob	Y Upv						•	•	•	•
Ň			+									
				on product la	oel: MPa, Pressure	gauge in SI units: MPa					•	
	f	Unit		on product la	oel: psi, Pressure g	auge: MPa/psi dual scal	e	O*10	O*10	O*10	O*10	0*10
			ZA*9 Dia	tal proseuro si	vitch: With unit sele	action function		∆*11			∆*11	

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
 *2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.

*3 The assembly consists of a bracket and set nuts (applicable to the AR20(K)-D to AR40(K)-D). The 0/F0/(L) and 0/F0/(L) accompliant include 2 trans of brackets and 2

The AR50(K)-D and AR60(K)-D assemblies include 2 types of brackets and 2 mounting screws.

*4 A 0.7 MPa pressure gauge will be fitted.

*5 Cannot be selected for the type with a set nut (option "H")
*6 The direction the pressure gauge scale plate faces is from the knob site

*6 The direction the pressure gauge scale plate faces is from the knob side.

*7 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring top entry" for the electrical entry. (Select "wiring bottom entry" when the semi-standard Y is chosen simultaneously.)
*8 For the pipe thread type: NPT This product is for overseas use only according to the New Measurement Act. (The SI unit

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.

 *9 For options: E1, E2, E3, E4. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
 *10 O: For the pipe thread type: NPT only

*10 \triangle : Select with options: E1, E2, E3, E4.





For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

21 - Standard model no.

Copper, Fluorine and Silicone-free + Low Particle Generation

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AR(K)-D 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.smcworld.com

Design / Selection

\land Warning

 Residual pressure disposal (outlet pressure removal) is not possible for the AR20-D to AR60-D even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the regulator with a backflow function (AR20K-D to AR60K-D).

A Caution

1. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

For pressure control equipment selection, refer to the "Product Selection Guide."

Maintenance

\land Warning

 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. A digital pressure gauge is recommended for such situation or as deemed necessary.

Mounting / Adjustment

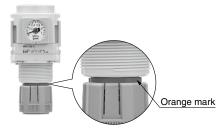
\land Warning

- **1.** Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- **2.** Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.
- 3. Before replacing or changing the mounting direction of the pressure gauge, or changing the direction of the scale plate, be sure to release the inlet and outlet pressure completely.

It is dangerous to replace or change the mounting direction of the pressure gauge, or change the direction of the scale plate, while it is under pressure.

A Caution

- **1.** Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
 - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
 - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).



Piping

M Warning

 To screw the pressure gauge and piping materials into the pressure gauge port on the product, tighten to the recommended torque (3 to 5 N·m) while securely holding the AR(K)-D in place. Additionally, when mounting a One-touch fitting to the pressure gauge port, refer to the Fittings and Tubing Precautions.



AC
AF + AR + AL
AW + AL
AF + AR
AF + AFM + AR
AW + AFM
Attachments
AF
AFM / AFD
AR
AL
AW



Modular Type Lubricator **AL Series**

Lubricator AL Series	Model	Port size	Options
- Film	AL20-D	1/8, 1/4	
4,19-62 6 44/00 20 10 10 20 600 20 10 10 20	AL30-D	1/4, 3/8	
	AL40-D	1/4, 3/8, 1/2	Bracket
	AL40-06-D	3/4	Diacket
	AL50-D	3/4, 1	
p. 106 to 111	AL60-D	1	

ol	\leftarrow		Ľ	20-D to A	<i>AL</i>	60)-	D		
-)3 [6	How to Order	Semi-sta · Select or · When mo in alphan Example)	e each fo ore than c umeric o	or a to d . one speci rder.	fication is	n	L30-D
<u> </u>	<u> </u>		Symbol	Description	Description		Body size			
						20	30	40	50	60
Pipe thread type		Nil	Rc		•			•		
		N	NPT		•	•	•	•	•	
			F	G						
			+ 01	1/8						
		02	1/8		•	•		_		
		03	3/8		_		•		_	
		Port size	04	1/2		_	_	•	_	_
			06	3/4		_	_		•	_
			10	1		_		-		
			+							-
	Opt	tion (Mounting)	Nil B*1	Without mounting option				•		•
			+	With bracket		•		•	U	
7			Nil	Polycarbonate bowl						
			2	Metal bowl		•	•	•	•	•
		Bowl*2	6	Nylon bowl		•		•	•	•
	а	DOMI	8	Metal bowl with level gauge		_				
			С	With bowl guard		•	*3	*3	* ³	*3
			6C	With bowl guard (Nylon bowl)			*4	*4	*4	*4
			+ Nil	Without drain cock]					
	b	Lubricant exhaust	3	Without drain cock With drain cock Drain cock with barb fitting			•		•	•
		port	3W*5				•	•	•	•
			+	_				-	-	-
		Flow direction	Nil	Flow direction: Left to right						
	с	Flow direction	R	Flow direction: Right to left						
			+							
	d	Unit	Nil	Unit on product label: MPa, °C		•	● ○* ⁷	•	● ○*7	● ○* ⁷
1			Z *6	Unit on product label: psi, °F		0*7	1 ()*/	0*7	1 ()*/	1 ()*/

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the b
*2 Refer to chemical data on page 111 for chemical resistance of the bowl.
*3 A bowl guard is provided as standard equipment (polycarbonate).
*4 A bowl guard is provided as standard equipment (nylon).
*5 The combination of metal bowl 2 and 8 is not available.
*6 For the 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 the pipe thread type: NPT only

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AL

AW

AL20-D to AL60-D Series

Standard Specifications

Model	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D			
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1			
Fluid	Air								
Ambient and fluid temperatures	–5 to 60°C (No freezing)								
Proof pressure			1.5	MPa					
Max. operating pressure			1.0	MPa					
Min. dripping flow rate*1	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR)	50 L/min (ANR)	190 L/min (ANR)	220 L/min (ANR)			
Oil capacity	25 cm ³	55 cm ³		135	cm ³	1			
Recommended lubricant	Class 1 turbine oil (ISO VG32)								
Bowl material	Polycarbonate								
Bowl guard	Semi-standard (Steel) Standard (Polycarbonate)								
Weight	0.10 kg	0.18 kg	0.37 kg	0.41 kg	0.92 kg	0.99 kg			

*1 The flow rate is 5 drops or greater/min under the following conditions: Inlet pressure of 0.5 MPa; Class 1 turbine oil (ISO VG32); Temperature at 20°C; Oil adjustment valve fully open. For a circuit that repeatedly turns ON and OFF on the outlet side, make the adjustment so that the average air consumption per minute becomes the minimum dripping flow rate or more.

Bowl Assembly/Part Nos.

Bowl	Lubricant exhaust	Other			Мс	odel			
material	port	Other	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D	
	Without drain cock	—	C2SL-D	—			_		
	Without urain cock	With bowl guard	C2SL-C-D	C3SL-D	C4SL-D				
Polycarbonate	With drain cock	—	C2SL-3-D	—		_	-		
Folycarbonale	With Urain Cock	With bowl guard	C2SL-3C-D	C3SL-3-D		C4SL	3-D		
	Drain cock with barb fitting	With bowl guard	—	C3SL-3W-D					
	Without drain cock	—	C2SL-6-A	—	_				
		With bowl guard	C2SL-6C-A	C3SL-6-A	C4SL-6-A				
Nylon	With drain cock	—	C2SL-36-A	—	_				
INVIOIT		With bowl guard	C2SL-36C-A	C3SL-36-A					
	Drain cock with barb fitting	With bowl guard	—	C3SL-36W-A	A C4SL-36W-A				
	Without drain cock	—	C2SL-2-A	C3SL-2-A	C4SL-2-A				
Metal	Without urain cock	With level gauge	_	C3LL-8-A	C4LL-8-A				
ivietal	With drain cock	—	C2SL-23-A	C3SL-23-A		C4SL	-23-A		
	WITT UTAIL COCK	With level gauge		C3LL-38-A		C4LL-38-A			

SMC

*1 The bowl assembly comes with a bowl seal. Please contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

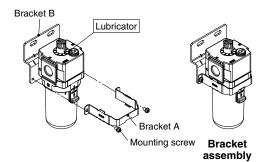
Optional			Мо	del		
specifications	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D
Bracket assembly ^{*1}	AF24P-070AS	AF34P-070AS	AF44P-070AS	AF49P-070AS	AF54P	-070AS

*1 The assembly consists of a bracket A/B and 2 mounting screws.

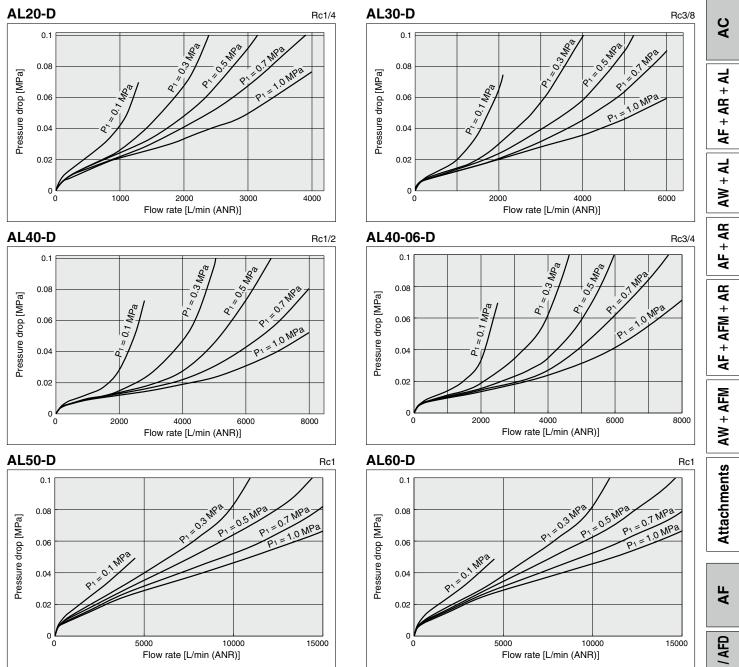
Replacement Parts

Description	Part no.									
Description	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D				
Sight dome assembly	AL20P-080AS									
Lubrication plug assembly	AL24P-060AS	AL34P-060AS	AL44P-060AS							
Damper retainer assembly	AL20P-030AS	AL30P-030AS	AL40P-030AS AL54P-030AS AL60			AL60P-030AS				
Damper assembly	AL20P-040S	AL30P-040S	AL44P-040S AL60P-040AS							
Bowl seal	C2SFP-260S C32FP-260S C42FP-260S									
Bowl assembly*1, *2	*2 Refer to "Bowl Assembly/Part Nos."									

*1 The bowl assembly comes with a bowl seal.
*2 Please contact SMC separately for psi and °F unit display specifications.



Lubricator AL20-D to AL60-D Series



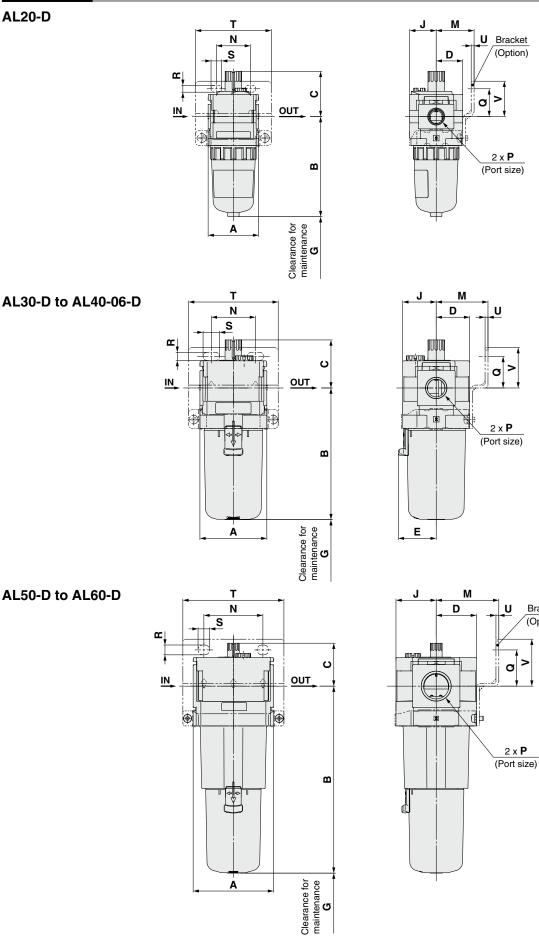
Flow Rate Characteristics (Representative values)



AL20-D to AL60-D Series

Dimensions





SMC

Bracket

(Option)

Lubricator AL20-D to AL60-D Series

			Semi-stan	dard			
Applicable	PC	C/PA bowl	Meta	l bowl	Metal bowl with level gauge		
model	With drain cock	Drain cock with barb fitting	Without drain cock	With drain cock	Without drain cock	With drain cock	
AL20-D	B		m m	a a			
AL30-D to AL60-D	n	Barb fitting applicable tubing: T0604	m	m			

			Standard /	nonifier	tiona						Op	tional sp	ecificati	ons		
Model			Standard s	specifica	uions				Bracket mount							
	Р	Α	В	С	D	E	G	J	М	Ν	Q	R	S	Т	U	V
AL20-D	1/8, 1/4	40	79.3	35.9	21	—	60	21	30	27	22	5.4	8.4	60	2.3	28
AL30-D	1/4, 3/8	53	104.3	38.1	26.5	30	80	26.5	41	35	25	6.5	13	71	2.3	32
AL40-D	1/4, 3/8, 1/2	70	136.1	44	35.5	38.4	110	35.5	50	52	30	8.5	12.5	88	2.3	39
AL40-06-D	3/4	75	138.1	44	35.5	38.4	110	35.5	50	52	34	8.5	12.5	88	2.3	43
AL50-D	3/4, 1	90	209.1	48	45	—	110	45	70	66	40.5	11	13	113	3.2	52.5
AL60-D	1	95	223.1	48	45	—	110	45	70	66	40.5	11	13	113	3.2	52.5

		Sem	ni-standard	l specificat	ions		
Model	PC/P4	A bowl	Metal	bowl	Metal bowl with level gauge		
Moder	With drain cock	With barb fitting	Without drain cock	With drain cock	Without drain cock	With drain cock	
	В	В	В	В	В	В	
AL20-D	87.6	_	84.5	87.4	—	—	
AL30-D	115.4	123.9	104.3	117.8	124.3	137.8	
AL40-D	147.1	155.6	136	149.5	156.1	169.5	
AL40-06-D	149.1	157.6	138	151.5	158.1	171.5	
AL50-D	220.1	228.6	209	222.5	229	242.5	
AL60-D	234.1	242.6	223	236.5	243	256.5	

AL

AF



AL-D 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.smcworld.com

Design / Selection

M Warning

- **1.** Do not introduce air from the outlet side as this can damage the damper.
- 2. The standard bowl and sight dome of the lubricator is 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.

Chemical resistance of polycarbonate bowl with sight dome and nylon bowl with sight dome

Туре	Chemical name	Application examples	Material		
туре	Chemical hame	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0	
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	_	×	Δ	
Chlorine solvents	ne Carbon tetrachloride Chloroform Cleansing liquid for met		×	Δ	
Aromatic series	Toluene		×	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 Character Leak tester		— cts may occur. ×: Effe	×	Δ	

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

Design / Selection

A Caution

1. When the piping is branched on the inlet side, install a check valve to prevent the lubricant from back flowing.

Maintenance

\land Warning

- **1.** For the AL20-D, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurized condition.
- Tighten the lubrication plug to the recommended tightening torque. Insufficient tightening torque may cause loosening or defective sealing. Excessive tightening torque may damage the thread, etc.

Recommended Torque

i i coominenta	cu i olque		Onit. Nam
Model	AL20-D	AL30-D	AL40-D AL40-06-D AL50-D AL60-D
Torque	0.25 to 0.35	0.35 to 0.45	0.5 to 0.6

Unit[,] N₂m

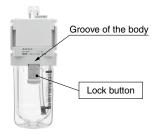
3. Adjustment of the oil regulating valve (sight dome assembly) for models from the AL20-D to AL60-D should be carried out manually. Turning it counterclockwise increases the dripping amount, and turning it clockwise reduces the dripping amount. The use of tools can result in damage to the unit. From the fully closed position, three rotations will bring it to the fully open position. Do not rotate it any further than this. Note that the numbered scale markings are guidelines for adjusting the position, and not indicators of the dripping amount.

Mounting / Adjustment

A Caution

SMC

1. When the lubricator bowl is installed on the AL30-D to AL60-D, 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.



Modular Type Filter Regulator **AV Series**

Filter Regulator AW Series	Model	Port size	Set pressure	Options	AF + AR + AL
	AW20(K)-D	1/8, 1/4			AW + AL
	AW30(K)-D	1/4, 3/8		Bracket Set nut	R AF + AR
	AW40(K)-D			(for panel mount) Float type auto drain Square embedded type pressure gauge	+ AFM + AR
		1/4, 3/8, 1/2	0.05 to 0.85 MPa 0.02 to 0.2 MPa	Digital pressure switch Round type pressure gauge	AW + AFM
		0/4	-		
	AW40(K)-06-D	3/4			Attachments
	AW60(K)-D	3/4, 1		Bracket Float type auto drain Square embedded type pressure gauge Digital pressure switch	Attac
p. 113 to 129				Round type pressure gauge	AF

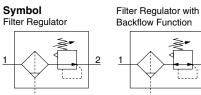
SMC

AFM / AFD

AR

AC

F
1



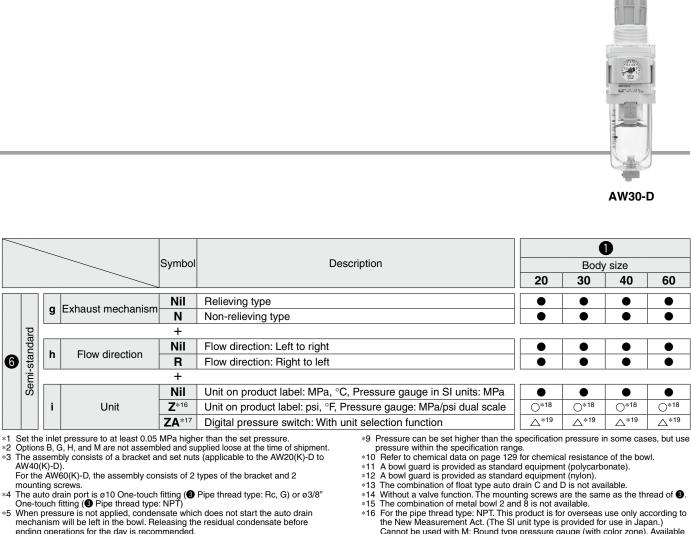
\geq 2

· 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 $\,_{
m \vartriangleright}$ 3 <mark>-</mark> 3 pressure release of the outlet side can be ensured for a safety purpose.

						tion and Se	emi-stan	dard Svr	nbol Sele	ection	
1	W		30 - 0 0 8	03		elect one eac /hen more the alphanumer	one each for a to i . more than one specification is required, indica anumeric order. e) AW30K-F03 <u>BE</u> -1 <u>NR</u> -D				
<u> </u>	<u> </u>	_	_								
				Symbol	Description		20	Body 30	size 40	60	
				Nil	Without backflow function		•	•	•	•	
	N	Vith	backflow function	K *1	With backflow function		•	•	•	•	
				+							
				Nil	Rc		•	•	•	•	
)		Pij	pe thread type	N	NPT		•	•	•	•	
				F +	G		•		\bullet	•	
				- 01	1/8						
				02	1/4		•	•	•	_	
			Dort oizo	03	3/8		_	•	•	_	
			Port size	04	1/2		_			_	
		06 3/4					—	_		•	
				10	1		—	—	—	•	
_				+	APPL and an end to a sufficient		•				
		Nil Without mounting option a Mounting B*3 With bracket					•	•	•		
		а	Mounting	H	With bracket With set nut (for panel mount)		•	•			
				+] [
				b	Nil	Without auto drain					•
		b	Float type auto drain*4	C *5	N.C. (Normally closed) Drain port is closed when pressure is not	applied.	•	•	•	•	
C,	2		urain	D *6	N.O. (Normally open) Drain port is open when pressure is not	applied.	—	•		•	
	Option*4			+							
	b			Nil	Without pressure gauge		•	•	•	•	
	-		Pressure gauge*7	E	Square embedded type pressure gauge (with limit indica	ator)	•	•	•	•	
				G M	Round type pressure gauge (with limit indicator) Round type pressure gauge (with color zone)		•	•	•		
		С		E1	Output: NPN output, Electrical entry: Wiring bottom entry	/		•			
			Digital pressure	E2	Output: NPN output, Electrical entry: Wiring top entry		•	•	•	Ť	
			switch*8	E3	Output: PNP output, Electrical entry: Wiring bottom entry	/	•	•	•	•	
				E 4	Output: PNP output, Electrical entry: Wiring top entry		•	•	\bullet	•	
				+		,			,		
		d	Set pressure*9	Nil	0.05 to 0.85 MPa setting		•	•	•	•	
				1	0.02 to 0.2 MPa setting		•	•	ullet	•	
	1			+ Nil	Polycarbonate bowl					•	
				2	Metal bowl		•	•			
	aro			6	Nylon bowl		•	•	•		
	and	е	Bowl ^{*10}	8	Metal bowl with level gauge		_	•	•	Ĭ	
)	Semi-standard			C	With bowl guard		•	*11	*11	*1	
	e			6C	With bowl guard (Nylon bowl)		•	*12	*12	*1	
0	ິ			+							
				Nil	With drain cock		•	•	●	•	
		f	Drain port*13	J *14	Drain guide 1/8		•	_	_	_	
				₩* ¹⁵	Drain guide 1/4 Drain cock with barb fitting		_	•	•		
				VV	Drain cock with barb litting		—			•	



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.

Semi-standard

6

*1 *3

- *7 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
 *8 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring bottom entry" for the electrical entry.
- Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially. *17 For options: E1, E2, E3, E4 This product is for overneed use only according to the New Macauran in the
- The options: E1, E2, E3, E4
 This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
 *18 ○: For the pipe thread type: NPT only
 *19 △: Select with options: E1, E2, E3, E4.

AW + AFMAttachments AF AFM / AFD A R

AC

AF + AR + AL

+ AL

Å

AF + AR

AF + AFM + AR

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Standard Specifications

М	odel	AW20-D	AW30-D	AW40-D	AW40-06-D	AW60-D			
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1			
Pressure gauge port	size ^{*1}			1/8					
Fluid		Air							
Ambient and fluid ter	nperatures*2		-{	5 to 60°C (No freezi	ng)				
Proof pressure				1.5 MPa					
Max. operating press	ure			1.0 MPa					
Auto drain minimum	N.C.	0.1 MPa 0.15 MPa							
operating pressure	N.O.	— 0.1 MPa							
Set pressure range		0.05 to 0.85 MPa							
Nominal filtration rati	ng ^{*3}	5 μm							
Compressed air purit	y class ^{*4}		ISO	8573-1:2010 [6 : 4	: 4] ^{*5}				
Drain capacity		8 cm ³	25 cm ³		45 cm ³				
Bowl material				Polycarbonate					
Bowl guard		Semi-standard (Steel) Standard (Polycarbonate)							
Construction		Relieving type							
Weight		0.18 kg	0.34 kg	0.64 kg	0.69 kg	1.76 kg			

*1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.
*2 -5 to 50°C for the products with the digital pressure switch
*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant] Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable
*4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes. For details on this standard, refer to page 131.
*5 The compressed air quality class on the inlet side is [7:4:4].

Bowl Assembly/Part Nos.

Bowl	Drain discharge	Ducin a cut	Other			Model			
material	mechanism	Drain port	Other	AW20-D	AW30-D	AW40-D	AW40-06-D	AW60-D	
		With drain cock	—	C2SF-D	_		—		
		With train cock	With bowl guard	C2SF-C-D	C3SF-D		C4SF-D		
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D			
Polycarbonate		With drain guide	—	C2SF□-J-D	_		—		
FOIYCarbonale		(without valve function)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D		C4SF□-J-D		
		Normally closed	—	AD27-D	—		—		
	Automatic*1	(N.C.)	With bowl guard	AD27-C-D	AD37□-D		AD47□-D		
	(Auto drain)	Normally open (N.O.)	With bowl guard	—	AD38□-D		AD48□-D		
		With drain cock	_	C2SF-6-A	_				
	Manual	WITT UTAIL COCK	With bowl guard	C2SF-6C-A	C3SF-6-A				
		Drain cock with barb fitting	With bowl guard	—	C3SF-6W-A				
Nylon		With drain guide	—	C2SF□-6J-A	—		—		
Nyion		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A			
		Normally closed	—	AD27-6-A	—		—		
	Automatic*1	(N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A		AD47□-6-A		
	(Auto drain)	Normally open (N.O.)	With bowl guard	—	AD38□-6-A	A AD48□-6-A			
		With drain cock	—	C2SF-2-A	C3SF-2-A		C4SF-2-A		
	Manual	With drain cock	With level gauge	—	C3LF-8-A		C4LF-8-A		
	Mariuai	With drain guide	—	C2SF□-2J-A	C3SF□-2J-A		C4SF□-2J-A		
Metal	Matal	(without valve function)	With level gauge	—	C3LF□-8J-A		C4LF□-8J-A		
ivietal		Normally closed		AD27-2-A	AD37□-2-A		AD47□-2-A		
	Automatic*1	(N.C.)	With level gauge		AD37□-8-A		AD47□-8-A		
	(Auto drain)	Normally open	—	—	AD38□-2-A		AD48□-2-A		
		(N.O.)	With level gauge	_	AD38□-8-A		AD48□-8-A		

*1 The bowl assembly comes with a bowl seal.

in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain). No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8") Please contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

Optional apositioatic				Model					
Optional specificatio	JIIS	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D			
sembly ^{*1}		AW23P-270AS	AR33P-270AS	AR43P	-270AS	AR54P-270AS			
		AR23P-260S	AR33P-260S	AR43F	P-260S	*2			
	Standard	G36-1	0-□01	G46-10-□01					
Pressure Round type		G36-4-□01		G46-4-⊡01					
		G36-10	-□01-L		G46-10-□01-L				
(with color zone)	0.02 to 0.2 MPa setting	G36-4-	-□01-L	G46-4-⊡01-L					
0	Standard		GC3-10AS-D [136150A (Pressure gauge cover only)]						
embedded type ^{*4}	0.02 to 0.2 MPa setting	GC3-4AS-D [136150A (Pressure gauge cover only)]							
	NPN output, Wiring bottom entry	ISE35-N-25-MLA-X523 [ISE35-N-25-M (Switch body only)]*5							
oouro ousitak	NPN output, Wiring top entry	15	SE35-R-25-MLA-X5	23 [ISE35-R-25-M	(Switch body only)]	*5			
Digital pressure switch PNP output, Wiring bottom entr		15	SE35-N-65-MLA-X5	23 [ISE35-N-65-M	(Switch body only)]	*5			
PNP output, Wiring top entry			ISE35-R-65-MLA-X523 [ISE35-R-65-M (Switch body only)]* ⁵						
	sembly ^{*1} Round type Round type (with color zone) Square embedded type ^{*4}	Round type Standard Round type 0.02 to 0.2 MPa setting Round type Standard (with color zone) Standard Square Standard embedded type*4 Standard Ssure switch NPN output, Wiring bottom entry NPN output, Wiring bottom entry NPN output, Wiring bottom entry PNP output, Wiring bottom entry	Sembly*1 AW20(K)-D sembly*1 AW23P-270AS AR23P-260S AR23P-260S Round type 0.02 to 0.2 MPa setting G36-1 Round type (with color zone) Standard G36-10 0.02 to 0.2 MPa setting G36-4 Square embedded type*4 Standard 0.02 to 0.2 MPa setting G36-4 Square embedded type*4 Standard NPN output, wiring bottom entry IS NPN output, Wiring top entry IS NPN output, Wiring bottom entry IS PNP output, Wiring bottom entry IS PNP output, Wiring bottom entry IS PNP output, Wiring bottom entry IS	AW20(K)-D AW30(K)-D sembly*1 AW23P-270AS AR33P-270AS AR23P-260S AR33P-260S AR33P-260S Round type 0.02 to 0.2 MPa setting G36-10-□01 Round type (with color zone) Standard G36-4-□01-L Square embedded type*4 Standard G36-4-□01-L Square embedded type*4 Standard GC3-10AS-D [13 NPN output, wiring bottom entry ISE35-N-25-MLA-X5 NPN output, Wiring top entry ISE35-R-25-MLA-X5 PNP output, Wiring bottom entry ISE35-N-65-MLA-X5 PNP output, Wiring bottom entry ISE35-N-65-MLA-X5 PNP output, Wiring bottom entry ISE35-N-65-MLA-X5	Optional specifications AW20(K)-D AW30(K)-D AW40(K)-D sembly*1 AW23P-270AS AR33P-270AS AR43P AR23P-260S AR33P-260S AR43P AR20(L) G36-10-□01 01 0.02 to 0.2 MPa setting G36-4-□01-L 0.02 to 0.2 MPa setting GC3-4AS-D [136150A (Pressure ga setting Square embedded type*4 Standard GC3-4AS-D [136150A (Pressure ga setting ISE35-N-25-MLA-X523 [ISE35-N-25-M NPN output, Wiring bottom entry ISE35-R-25-MLA-X523 [ISE35-R-25-M M NPN output, Wiring bottom entry ISE35-N-65-MLA-X523	Optional specifications AW20(K)-D AW30(K)-D AW40(K)-D AW40(K)-06-D sembly*1 AW23P-270AS AR33P-270AS AR43P-270AS AR43P-260S sembly*1 AR23P-260S AR33P-260S AR43P-260S AR43P-260S Round type Standard G36-10-□01 G46-10-□01 0.02 to 0.2 MPa setting G36-4-□01 G46-4-□01 Round type (with color zone) Standard G36-4-□01-L G46-4-□01-L Square embedded type*4 Standard GC3-10AS-D [136150A (Pressure gauge cover only)] 0.02 to 0.2 MPa setting GC3-4AS-D [136150A (Pressure gauge cover only)] setting GC3-4AS-D [136150A (Pressure gauge cover only)] 0.02 to 0.2 MPa setting GC3-4AS-D [136150A (Pressure gauge cover only)] setting GC3-4AS-D [136150A (Pressure gauge cover only)] NPN output, Wiring bottom entry ISE35-N-25-MLA-X523 [ISE35-N-25-M (Switch body only)]' NPN output, Wiring top entry ISE35-N-65-MLA-X523 [ISE35-N-65-M (Switch body only)]' PNP output, Wiring bottom entry ISE35-N-65-MLA-X523 [ISE35-N-65-M (Switch body only)]'			

*1 The assembly consists of a bracket and set nuts. For the AW60(K)-D, the assembly consists of a bracket A/B and 2 mounting screws.

Bracket

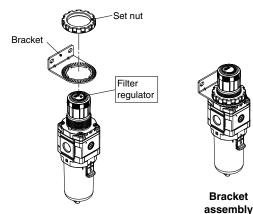
the pressure gauge supply for both MPa and psi unit specifications.

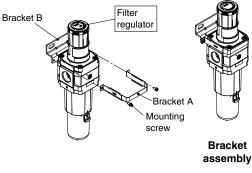
*4 Including one O-ring and 2 mounting screws. []: Pressure gauge cover only

* In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screws (2 pcs.) are attached.
[]: Switch body only (Regarding how to order the digital pressure switch, refer to page 130.)

AW20(K)-D to AW40(K)-06-D

AW60(K)-D





Replacement Parts

Deer	orintion			Part no.						
Dest	cription	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D				
Valve assembly		AW24P-060AS	AW34P-060AS	AW44P-060AS	AW49P-060AS	AW64P-060AS				
Filter element	t	AF20P-060S	AF30P-060S	AF40F	2-060S	AW60P-060S				
Baffle		AF24P-040S	AF34P-040S	AF44P-040S		AW64P-030S				
Diaphragm	Relieving type	AR24P-150AS	AR34P-150AS	AR44P-150AS		AR54P-150AS				
assembly	Non-relieving type	AR24P-150AS-N	AR34P-150AS-N	AR44P-1	AR44P-150AS-N					
Bowl seal		C2SFP-260S	C32FP-260S		C42FP-260S					
Bowl assemb	ly ^{*1, *2}		Refer	to "Bowl Assembly/Par	t Nos."					
Check valve assembly ^{*3}			AR24KP-020AS							

*1 The bowl assembly comes with a bowl seal.
*2 Please contact SMC separately for psi and °F unit display specifications.
*3 The check valve assembly is applicable for a filter regulator with backflow function (AW20K-D to AW60K-D) only. The assembly consists of a check valve cover, check valve body assembly, and 2 mounting screws.

多SMC

AF

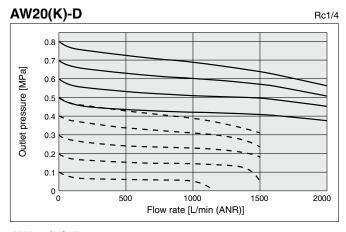
AFM / AFD

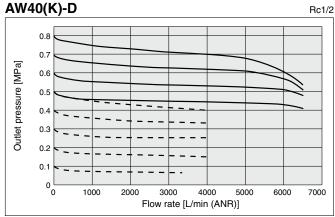
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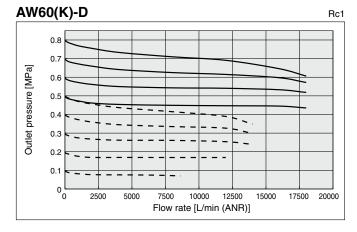
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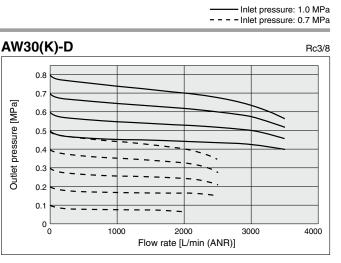
AV

Flow Rate Characteristics (Representative values)



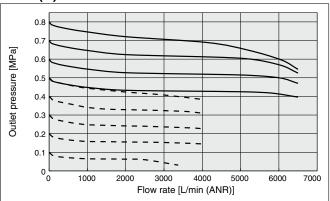






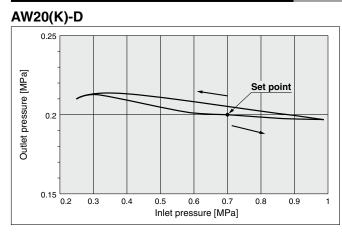
Rc3/4



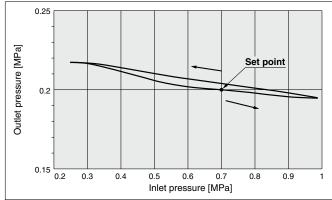


Pressure Characteristics (Representative values)

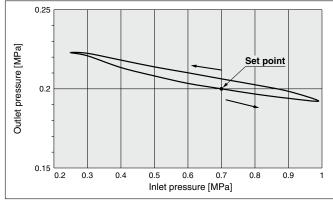
Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)

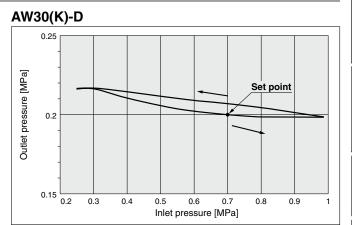




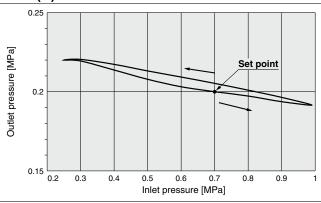






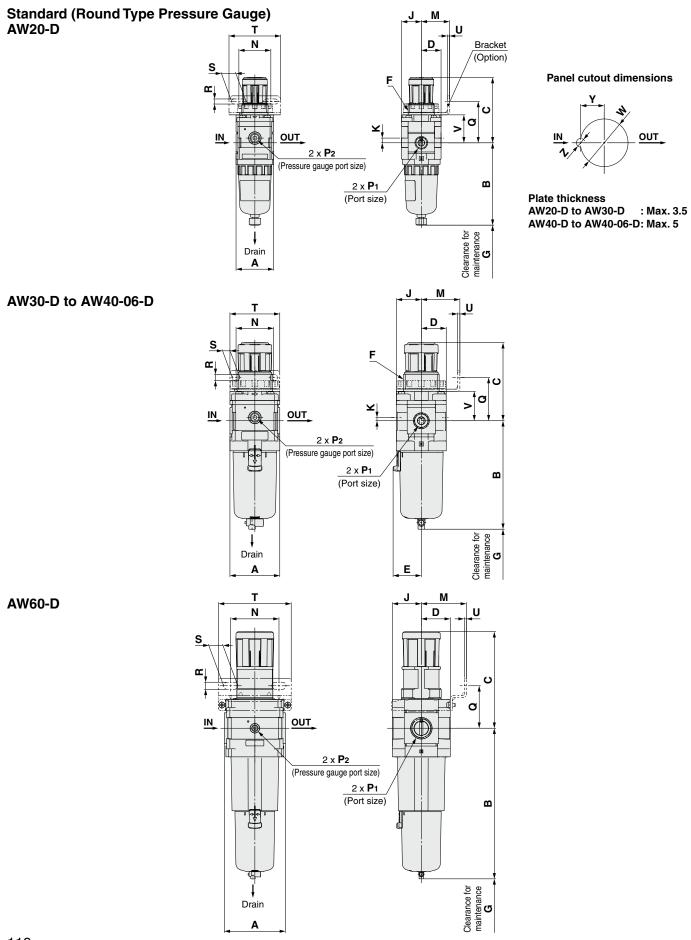




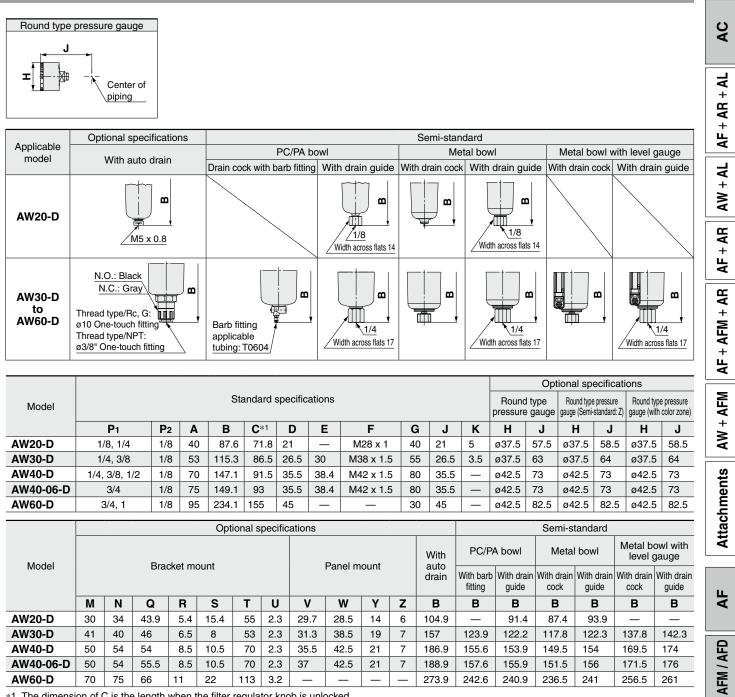


A

Dimensions



SMC



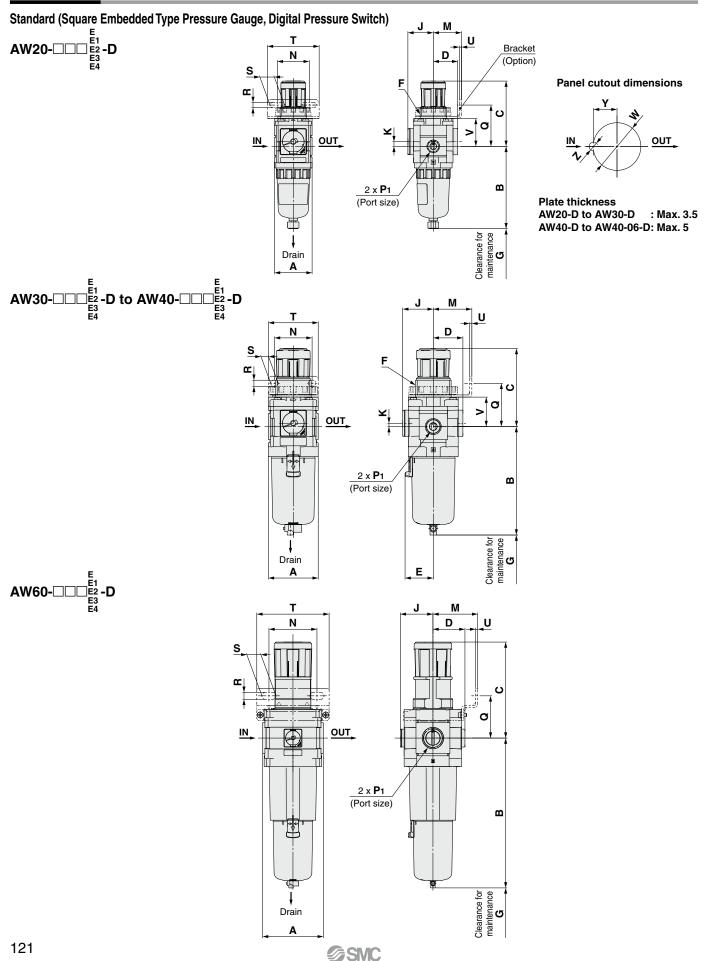
*1 The dimension of C is the length when the filter regulator knob is unlocked.

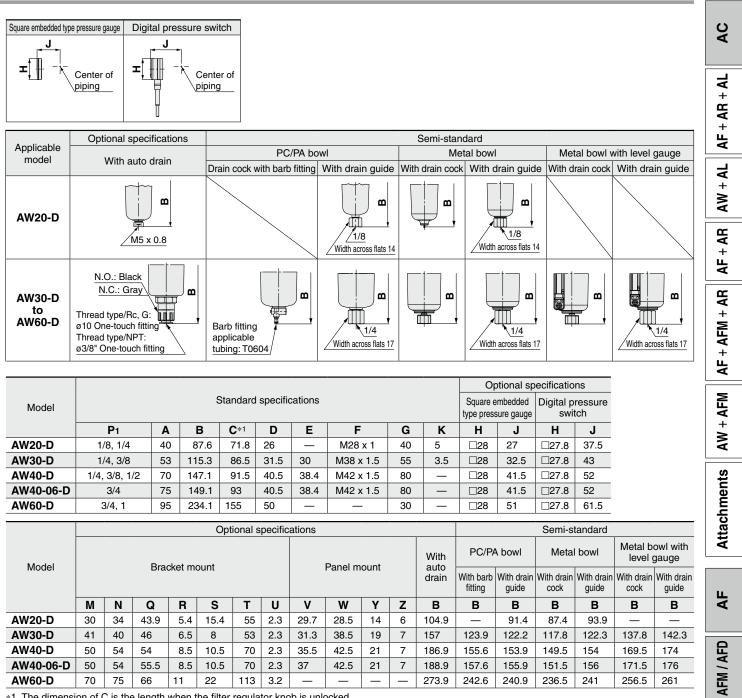
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Dimensions





SMC

*1 The dimension of C is the length when the filter regulator knob is unlocked.

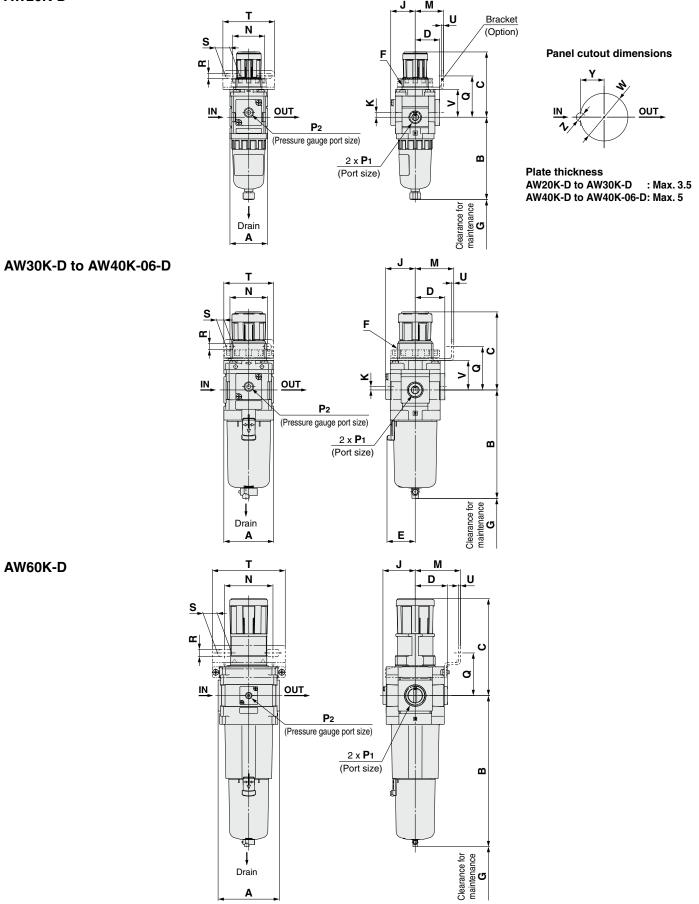


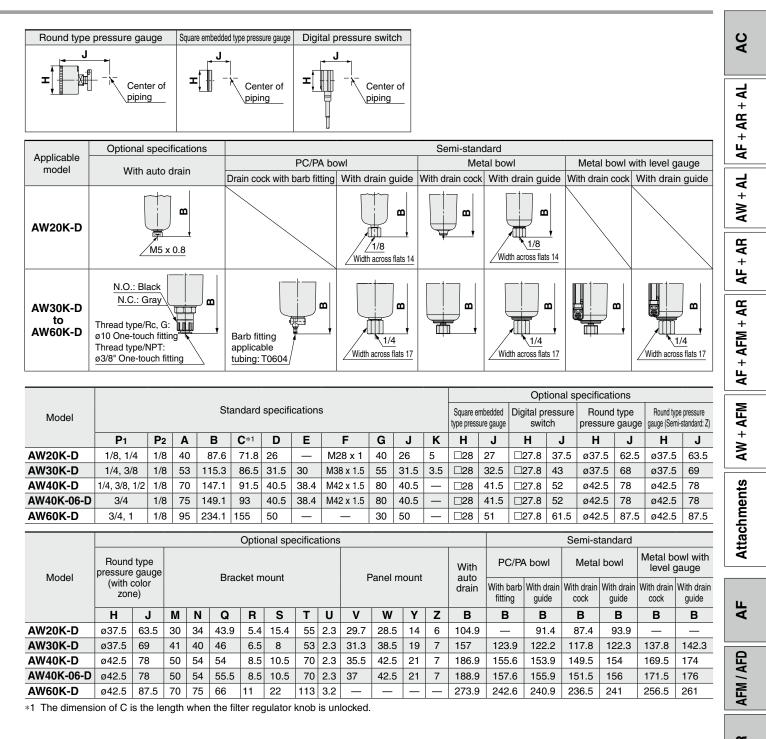
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Dimensions

With Backflow Function (Round Type Pressure Gauge, Square Embedded Type Pressure Gauge, Digital Pressure Switch) AW20K-D





AR

AL

AW

Filter Regulator/AW20-D to AW60-D Filter Regulator with Backflow Function/AW20K-D to AW60K-D Made to Order Inade

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



① 0.4 MPa Setting

The setting specification is 0.4 MPa.

When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

Specifications

Made-to-order part no.	-X406
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 Models

Model	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1

2 Long Bowl

Drain capacity is greater than that of standard models.

Applicable Models/Drain Capacity

Model	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1
Drain capacity [cm3]	19	43		88	
B dimension [mm]*1	108.1	137.3	167.2	169.2	254.2

*1 For polycarbonate bowls. Please contact SMC for other bowl materials.

AW20-D AW30 to 60-D



v	/3			D3 – – – – – – – – – – – – – – – – – – –								
VV	J											
			8									
			U	X406	0.4 MF	a setting						
				X64	Lon	g bowl						
tion	n an	d Semi-stand	ard Svn	nbol Selection		0						
			ara Oyn									
		e each for a to i .	ification	a required indicate in alphanumaria arder	0		Cotti				Dowl	
				s required, indicate in alphanumeric order.	υ.	4 MPa	a Setti	ng		Long	Bowl	
amp	Jie) A	W30K-F03BE-2	<u>INR-</u> D-X4	06								
<							1			6		
			Symbol	Description								
		2 occupitori	20	30	y size 40	60	20	30	y size 40	6		
	_										-	1
W	/ith ba	ackflow function	Nil	Without backflow function	•	•	•	•	•	•	•	•
			K *1	With backflow function	•							
1			+ Nil	Rc								
	Pine	e thread type	N	NPT	•		•	•		•	•	
Pipe thread type		F	G	•	•	•	•		•			
			+	3	•	•	•	•	•	•	•	
			01	1/8		—	-	_		_	—	- 1
			02	1/4	•	•	•	_		•	•	-
		Port size	03	3/8	—			—	—			-
Port size		04	1/2		-		—			•	-	
		06	3/4			•	•			•		
			10	1	_		-				—	
			+ Nil	Without mounting ontion								
	a Mounting		B*3	Without mounting option With bracket	•		•	•		•	•	
	a	wounting	H	With set nut (for panel mount)							÷	
			+	· · · · · · · · · · · · · · · · · · ·	-			l		-		
		Elect trips cuts	Nil	Without auto drain	•				_	-	_	-
	b	Float type auto drain*4	C*5	Float type auto drain (N.C.): Drain port is closed when pressure is not applied.	۲				—	—	—	-
Å		urain	D *6	Float type auto drain (N.O.): Drain port is open when pressure is not applied.							—	
ion		- r	+									
Option*2		Pressure	Nil	Without pressure gauge	•			•		•		
		gauge*7	E	Square embedded type pressure gauge (with limit indicator)	•	•	•	•		•	•	
		gauge	G M	Round type pressure gauge (with limit indicator) Round type pressure gauge (with color zone)	•	•	•	•		•	•	
	c	> <u> </u>	E1	Output: NPN output, Electrical entry: Wiring bottom entry	•			•				
		Digital	E2	Output: NPN output, Electrical entry: Wring bottom entry Output: NPN output, Electrical entry: Wiring top entry	•	•		•		•		
		pressure	E3	Output: PNP output, Electrical entry: Wiring top entry	•	•	•	•		•	ě	
		switch*8	E4	Output: PNP output, Electrical entry: Wiring top entry								Ĩ

How to Order

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
*2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.
*3 The assembly consists of a bracket and set nuts (applicable to the AW20(K)-D to AW40(K)-D). The AR60(K)-D assembly includes 2 types of brackets and 2 mounting screws.
*4 The auto drain port is o10 One-touch fitting (
 Pipe thread type: NPT)

*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 onpertions for the day is recommended ending operations for the day is recommended.

air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.

s recommended.
*7 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type. 0.7 MPa pressure gauge for 0.4 MPa type (-X406).
*8 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring bottom entry" for the electrical entry.



0.4 MPa Setting

Long Bowl

0 0 Symbol Description Body size Body size 20 30 40 60 20 30 40 60 Nil 0.05 to 0.85 MPa setting d Set pressure*9 0.02 to 0.2 MPa setting • 1 Nil . • Polycarbonate bowl . Metal bowl 2 . . . • . . • . • • • • • • . . 6 Nvlon bowl е Bowl*10 Metal bowl with level gauge • • 8 • *11 *1 .*11 .*11 With bowl guard • С • *12 _*12 *12 *12 _*12 6C With bowl guard (Nylon bowl) Semi-standard Nil With drain cock • . • • . . • • AFM / AFD Drain guide 1/8 • . 6 Drain port*13 **J***14 f Drain guide 1/4 **W***15 Drain cock with barb fitting • • Nil Exhaust Relieving type . . g mechanism Ν Non-relieving type • . Nil Flow direction: Left to right . h Flow direction Flow direction: Right to left R . • • Nil Unit on product label: MPa, °C, Pressure gauge in SI units: MPa **Z***16 O*18 i Unit Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale ○*18 ○*18 ○*18 ○*18 O*18 ○*18 ○*18 ZA*17 Digital pressure switch: With unit selection function ∆*19 ∆*19 ∆*19 ∆*19 ∆*19 ∆*19 ∆*19 ∆*19

*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 129 for chemical resistance of the bowl.
*11 A bowl guard is provided as standard equipment (polycarbonate).

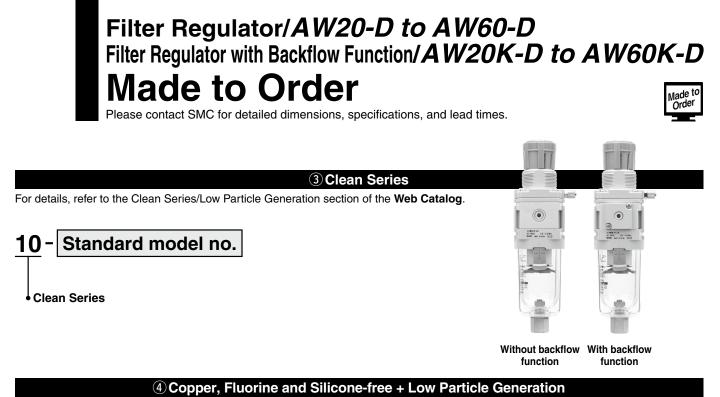
*12 A bowl guard is provided as standard equipment (pylon).
*13 The combination of float type auto drain C and D is not available.
*14 Without a valve function. The mounting screws are the same as the thread of **③**.
*15 The combination of metal bowl 2 and 8 is not available.
*16 For the pipe thread type: NPT This product is for overseas use only according to the New Measurement Act. (The SI unit two is provided for use in Japan) Cannot he used with M: Bound (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.

*17 For options: E1, E2, E3, E4 This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) *18 O: For the pipe thread type: NPT only *19 ∆: Select with options: E1, E2, E3, E4.

AV

AB

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For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

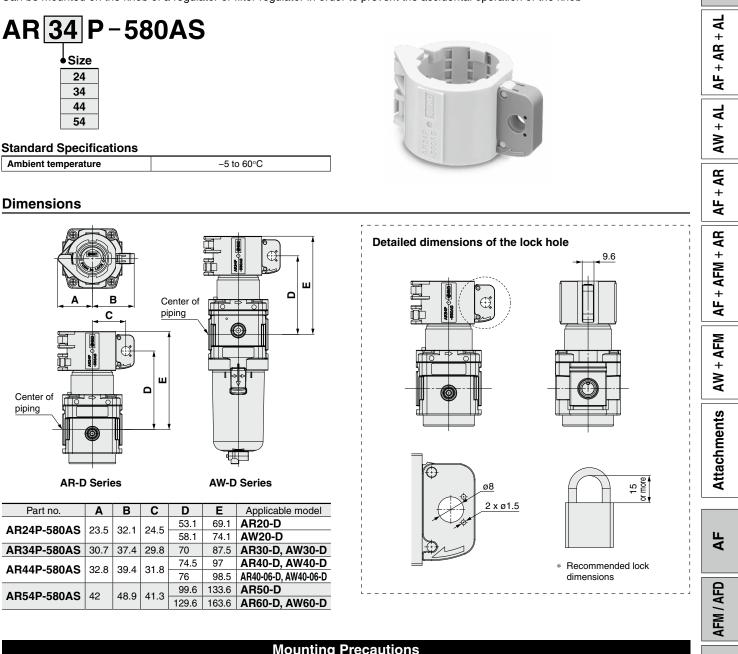
21 - Standard model no.

Copper, Fluorine and Silicone-free + Low Particle Generation



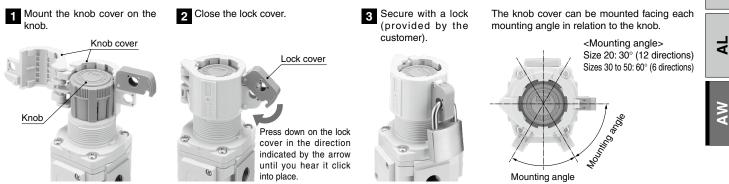
Knob Cover

Can be mounted on the knob of a regulator or filter regulator in order to prevent the accidental operation of the knob



Mounting Precautions

Before mounting the knob cover, confirm that the knob is in the locked state (in which the orange line is not visible). Mount the cover in accordance with the mounting instructions below.



SMC

AR

AC



AW(K)-D 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.smcworld.com

Design / Selection

A Warning

- Residual pressure disposal (outlet pressure removal) is not possible for the AW20-D to AW60-D even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the filter regulator with backflow function (AW20K-D to AW60K-D).
- 2. The bowl material of the standard filter regulator is 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.

Chemical resistance of polycarbonate or nylon bowl

			Mat	erial		
Туре	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0		
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	_	×	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		
O: Esse	\bigcirc : Essentially safe \triangle : Some effects may occur. \times : Effects will occur.					

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

A Caution

1. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

For pressure control equipment selection, refer to the "Product Selection Guide."

Maintenance

A Warning

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

Mounting / Adjustment

\land Warning

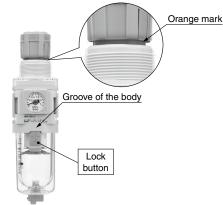
- Set the filter regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- **2.** Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

A 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).



 When the bowl is installed on the AW30-D to AW60-D, 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.

Piping

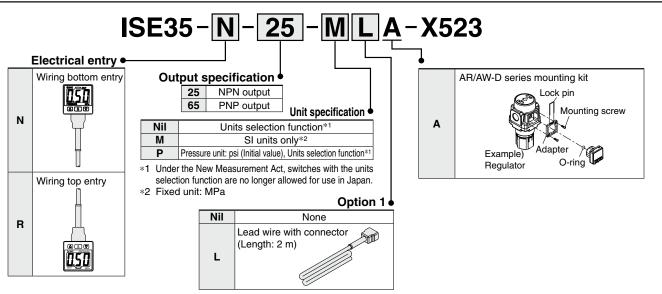
\land Warning

 To screw the pressure gauge and piping materials into the pressure gauge port on the product, tighten to the recommended torque (3 to 5 N·m) while securely holding the AW(K)-D in place. Additionally, when mounting a One-touch fitting to the pressure gauge port, refer to the Fittings and Tubing Precautions.

129

Digital Pressure Switch/ISE35-X523 Related Product

How to Order



Options/Part Nos.

When only optional parts are required, order with the part numbers listed below.

Description	Part no.	Note			
Lead wire with	ZS-32-A	Length: 2 m (With rubber cover)			
connector	20-02-A				
Mounting kit	ZS-32-C-X473	For ISE35-□-A-X523 (AR/AW-D series) Set screw (3 x 8 L, 2 pcs.), adapter, lock pin, and O-ring are attached.			

Applicable Series Product series that this product can be installed in

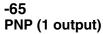
Product series	Model
	AC20-D, AC30-D, AC40-D, AC50-D, AC60-D
	AC20A-D, AC30A-D, AC40A-D, AC50A-D, AC60A-D
F.R.L. units	AC20B-D, AC30B-D, AC40B-D, AC50B-D, AC60B-D
	AC20C-D, AC30C-D, AC40C-D
	AC20D-D, AC30D-D, AC40D-D
Degulator	AR20(K)-D, AR30(K)-D, AR40(K)-D,
Regulator	AR50(K)-D, AR60(K)-D
Filter regulator	AW20(K)-D, AW30(K)-D, AW40(K)-D, AW60(K)-D
Mist separator regulator	AWM20-D, AWM30-D, AWM40-D
Micro mist separator regulator	AWD20-D, AWD30-D, AWD40-D

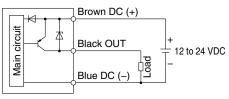
Specifications

Sher	incations					
Rated p	pressure range	0 to 1 MPa				
Display	//Set pressure range	-0.1 to 1 MPa				
Withsta	and pressure	1.5 MPa				
Display/S	mallest settable increment	0.01 MPa				
Applica	able fluid	Air, Non-corrosive gas, Non-flammable gas				
Power	supply voltage	12 to 24 VDC ±10%, Ripple (p-p) 10% or less (With power supply polarity protection)				
Curren	t consumption	55 mA or less (at no load)				
Switch	output	NPN or PNP open collector output: 1 output				
	Max. load current	80 mA				
	Max. applied voltage	30 V (With NPN output)				
	Residual voltage	1 V or less (With load current of 80 mA)				
	Response time	1 s (0.25, 0.5, 2, 3 s selections)				
Short c	ircuit protection	Yes				
Repeatability		±1% F.S.				
Hysteresis mode		Adjustable (Can be set from 0)				
nysteresis	Window comparator mode	Adjustable (Can be set from 0)				
Display	/ type	3-digit, 7-segment indicator, 2-color display (Red/Green) A switch can be operated simultaneously.				
Display	/ accuracy	±2% F.S. ±1 digit (at 25°C ±3°C ambient temperature)				
Indicat	or light	Lights up when output is turned ON (Green)				
Environmental	Enclosure	IP40				
resistance	Operating temperature range	 –5 to 50°C (No condensation or freezing) 				
		Oilproof heavy-duty vinyl cable				
Lead w	ire with connector	3 cores, ø3.4, 2 m				
(Optior	n: L)	Conductor cross section: 0.2 mm ² (AWG25)				
		Insulator O.D.: 1.16 mm				
Weight		Approx. 14 g (Body only), Approx. 38 g (Including lead wire with connector)				
Standa	rds	CE/UKCA marking, UL/CSA (E216656)				

Internal Circuits and Wiring Examples

-25 NPN (1 output)





International Standard ISO 8573-1:2010 Compressed Air Purity Classes

Compressed air is used in a variety of manufacturing processes. In this age, compressed air with a high degree of purity is becoming increasingly necessary.

For this reason, it is necessary to remove contaminants from systems which supply compressed air and to secure the quality. The standard which stipulates the class according to the quantities of contaminants in compressed air is ISO 8573-1.

[Outline]

[Scope]

Stipulates the purity class of contaminants (particles, water, oil) mixed in with the compressed air

Can be used in various places in compressed air systems

[Terms and Definitions]

- Purity class: An index assigned for each classification obtained by dividing the concentration of each contaminant into ranges
- \cdot Particle: Small discrete mass of solid or liquid matter
- · Humidity and liquid water: Water vapor (gas), Water droplets

[Purity Classes]

· Oil: Liquid oil, Oil mist, Vapor

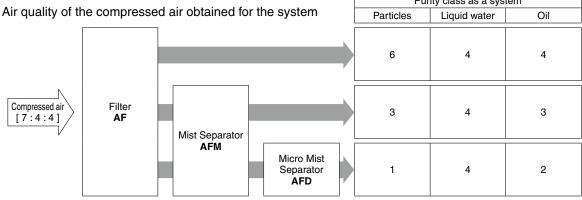
· ·								
	Parti	icles	Humidity and	Oil				
Maximum number of partic	les per cubic meter as a fun	ction of particle size d [µm]	of particle size d [µm] Mass concentration Cp		Concentration of liquid water Cw	Concentration of total oil		
$0.1 < d \le 0.5$	$0.5 < d \le 1.0$	$1.0 < d \le 5.0$	[mg/m3]	[°C]	[g/m3]	[mg/m³]		
	As specified by the equipment user or supplier and more stringent than class 1							
≤ 20000	≤ 400	≤ 10	—	≤ -70	—	≤ 0.01		
≤ 400000	≤ 6000	≤ 100	—	≤ -40	—	≤ 0.1		
—	≤ 90000	≤ 1000	—	≤ −20	—	≤1		
—	—	≤ 10000	—	≤ +3	—	≤ 5		
—	_	≤ 1 00000	—	≤ +7	—	—		
—	—	—	$0 < Cp \le 5$	≤ +10	—	—		
—	-	—	5 < Cp ≤ 10	—	Cw ≤ 0.5	—		
—	—	—	—	—	0.5 < Cw ≤ 5	—		
—	—	_	—	—	$5 < Cw \le 10$	—		
—	—	_	Cp > 10	—	Cw > 10	> 5		
	0.1 < d ≤ 0.5 ≤ 20000	PartMaximum number of particles per cubic meter as a fun $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ As spec ≤ 20000 ≤ 400 ≤ 400000 ≤ 6000	ParticlesMaximum number of particles per cubic meter as a function of particle size d [µm] $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ As specified by the equipme ≤ 20000 ≤ 400 ≤ 10 ≤ 400000 ≤ 6000 ≤ 100 $$ ≤ 90000 ≤ 10000 $$ ≤ 10000	Particles Maximum number of particles per cubic meter as a function of particle size d [µm] Mass concentration Cp $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ [mg/m3] As specified by the equipment user or supplier and second secon	Particles Humidity and Maximum number of particles per cubic meter as a function of particle size d [µm] Mass concentration Cp Pressure dew point $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ $[mg/m3]$ [°C] As specified by the equipment user or supplier and more stringent than ≤ 20000 ≤ 400 ≤ 10 $ < -70$ ≤ 400000 ≤ 6000 ≤ 100 $ < -40$ $ \le 90000$ ≤ 1000 $ < -40$ $ \le 90000$ ≤ 1000 $ < -40$ $ \le 10000$ $ < -20$ $ < 10000$ $ < -20$ $ < 100000$ $ < +3$ $ < +7$ $ < -20$ $ < +3$ $ < -20$ $-$	ParticlesHumidity and liquid waterMaximum number of particles per cubic meter as a function of particle size d [µm]Mass concentration CpPressure dew pointConcentration of liquid water Cw $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ $[mg/m3]$ [°C] $[g/m3]$ As specified by the equipment user or supplier and more stringent than class 1 ≤ 20000 ≤ 400 ≤ 100 $ \le -70$ $ \le 400000$ ≤ 6000 ≤ 100 $ \le -40$ $ \le 90000$ ≤ 1000 $ \le -20$ $ \le 10000$ $ \le +33$ $ \le 100000$ $ \le +33$ $ 0 < Cp \le 5$ $\le +10$ $ 0 < Cp \le 5$ $\le +10$ $ -$		

[How to Perform a Test to Check the Performance]

ISO 12500, which sets out the test method to be used in order to check the filter performance for each of the three kinds of contaminants, is indicated below.

- · Particle: ISO 12500-3:2009
- · Liquid water: ISO 12500-4:2009
- · Oil: ISO 12500-1:2007
- * Measured using a dedicated evaluation system which has been certified according to ISO 12500-□ and also by a third party (Certified)

[Purity Class Designation Example] ISO 8573-1:2010 [4 : 6 : 2] • Oil class 2 Concentration of total oil ≤ 0.1 mg/m³ • Humidity and liquid water class 4 1.0 µm < d ≤ Particles of 5.0 µm ≤ 10000 particles/m³ • Humidity and liquid water class 6 Pressure dew point ≤ +10°C Purity class as a system



The class indicates the compressed air purity according to ISO 8573-1:2010 (JIS B 8392-1:2012) and indicates the maximum purity class which can be obtained using that system. Note, however, that this value will differ according to the inlet air conditions.



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

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

AWarning

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

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

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

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

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

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

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

 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

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

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

Compliance Requirements

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

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.

Edition B * Attachments have been added. * The number of pages has been increased from 72 to 104. Edition C * Sizes 40-06, 50, and 60 have been added to the AC series. * Sizes 40-06, 50, and 60 have been added to the AF, AR(K), and AL. * The VHS40-06 and 50 have been added. * Size 40-06 has been added to the AFM/AFD. * Sizes 40-06 and 60 have been added to the AW(K). * Made to order options have been added. * The number of pages has been increased from 104 to 112.	YV ZQ	Edition D * A right angle square type pressure gauge has been added. * Various attachments have been added: Right angle/Reducing/Cross adapter, End plate * Made to order options have been added: Clean Series, Copper, fluorine and silicone-free + Low particle generation (AF, AR, AW) * A knob cover (option) has been added. * Connectable modular components have been added. * The number of pages has been increased from 112 to 136.
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Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

SMC Corporation Akihabara UDX 15F,

4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 Fax: 03-5298-5362 https://www.smcworld.com © 2023 SMC Corporation All Rights Reserved