# Mist Separator RegulatorNewMicro Mist Separator RegulatorRoHS

# **Transparent bowl guard**

Nominal ration rati **0.3 μm** 

### Improved environmental durability due to 2-layer construction

\* Body sizes 30 and larger

OSM

Nominal iltration ratin **0.01 μm**  100-0-0 107 Nell 1.11 - 1.11 M. 894C HIC H 101 E

		Series	Size	Nominal filtration rating [µm]	Max. flow capacity [I/min (ANR)]*1	Port size
	Sar		20		Up to 150	1/8, 1/4
/ Modular 🛛 🦷		AWM 121	30	0.3	Up to 330	1/4, 3/8
			40		Up to 820	1/4, 3/8, 1/2
🔪 is possible. 📕			20		Up to 90	1/8, 1/4
		AWD	30	0.01	Up to 180	1/4, 3/8
	= )		40		Up to 450	1/4, 3/8, 1/2
		-			*1 Conditions/Inlet pressure: 0.7 MPa, Outlet pres	ssure: 0.5 MPa

AWM-D/AWD-D Series

15 .

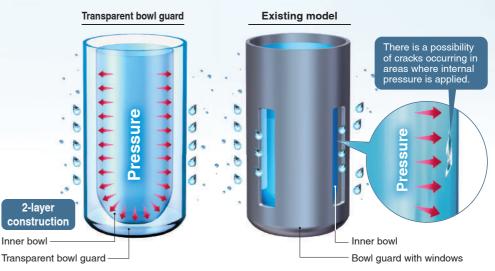




# **Transparent bowl guard**

# 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 pressurised 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.



# Lightweight: Max. 40.7 % reduction (0.24 kg)

Size	New AWM/AWD-D [kg]	AWM/AWD [kg]	Reduction [kg]
20	0.23	0.29	0.06 (20.7 %)
30	0.35	0.59	0.24 (40.7 %)
40	0.66	0.75	0.09 (12.0 %)

 $\ast$  The values in ( ) indicate the reduction rate.



Can be mounted on the knob in order to prevent the accidental operation of the knob



# **Simple Specials System**



For modular connection units (shipped assembled), the simple specials system can be used.

### **Short lead times**

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

### **Repeat orders**

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.

Combination	example 1
Mist separator	Pressure relief 3-port valve Spacer with bracket Piping adapter Spacer
Piping adapter E300-03-D — Spacer with bracket Y300T-D Mist separator regulator AWI Spacer Y300-D — Pressure relief 3-port valve V	M30-03-D — 1 pc. 1 pc.

### Pressure switch Spacer with bracket Micro mist separator Cross spacer Spacer with bracket L-shaped piping adapter Piping adapter L-shaped piping adapter E300L-03-D ----1 pc. Spacer with bracket Y300T-D -— 3 pcs. Micro mist separator regulator AWD30-03-D -– 1 pc. Spacer Y300-D — — 1 pc.

Combination example 2

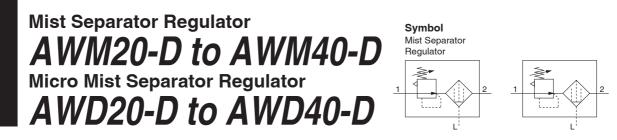
# Spacer Y300-D 1 pc. Pressure switch IS10M-30-D 1 pc. Cross spacer Y34-03-D 1 pc. Piping adapter E300-03-D 1 pc.



# Mist separator Spacer with bracket OUT OUT Fr-shaped piping adapter OUT OUT OUT OUT T-shaped piping adapter Mist separator AWM30-03-D 1 pc. Spacer with bracket Y300T-D 1 pc. T-shaped piping adapter E300T-03-D 1 pc.

Products do not come assembled. They should be ordered separately and assembled by the customer.





- $\cdot$  The AWM series is made up of a regulator and a mist separator to provide optimum results in applications such as clean air blow operations. (Nominal filtration rating: 0.3  $\mu$ m)
- The AWD series is made up of a regulator and a micro mist separator to provide optimum results in applications such as ultraclean air blow operations. (Nominal filtration rating: 0.01 μm)

How to Order

			1 <u>30</u> -   D <u>30</u> -		03 BE - D 03 BE - D	a to i. Option/Sen than one s alphanume	mi-standard: Select ni-standard symbol: pecification is requir rric order. WM30-03BE-1N-D	When more
_	_		0	2	3 4 5			
	<u> </u>	<u> </u>	_	0	Description		0	
				Symbol	Description		Body size	40
						20	30	40
				_	Rc	•	•	٠
2	F	Pipe	e thread type	Ν	NPT	•		
				F	G	•		•
				+	r		-1	
				01	1/8	•		_
3			Port size	02	1/4	•		•
				03	3/8	_	•	•
				04	1/2	—	—	•
				+				
			NA	<b>—</b>	Without mounting option	•	•	•
		a Mounting B*			With bracket	•		•
				H	With set nut (for panel mount)	•	•	•
	l r			+	Without auto drain	•		
		b	Float type auto	 C*4	N.C. (Normally closed) Drain port is closed when pressure is not applied.			
		b	drain*3	D*5	N.O. (Normally open) Drain port is open when pressure is not applied.	•		
	-   L ~			+	N.O. (Normally open) Drain port is open when pressure is not applied.		•	•
4	Option*				Without pressure gauge	•		•
(	ō		Pressure	Е	Square embedded type pressure gauge (with limit indicator)	•	•	•
			gauge*6	G	Round type pressure gauge (with limit indicator)	•	•	•
			94490	M	Round type pressure gauge (with colour zone)	•	•	•
		С		E1	Output: NPN output, Electrical entry: Wiring bottom entry	•	•	•
			Digital pressure	E2	Output: NPN output, Electrical entry: Wiring top entry	•	•	•
			switch*7	E3	Output: PNP output, Electrical entry: Wiring bottom entry	•		•
				E4	Output: PNP output, Electrical entry: Wiring top entry	•		•
				+	·			
		d	Set pressure*8	—	0.05 to 0.85 MPa setting	•		
		u	Set pressure	1	0.05 to 0.2 MPa setting	•	•	•
				+	·			
					Polycarbonate bowl	•	•	•
-	e			2	Metal bowl	•		•
-	lla	е	Bowl*9	6	Nylon bowl	•	•	•
5	stan	-		8	Metal bowl with level gauge			•
	Semi-standard			C	With bowl guard	•	*10	*10
	Sel			6C	With bowl guard (Nylon bowl)		*11	*11
	Г			+				•
					With drain cock	•	•	•
		f	Drain port*12	<b>J</b> * <sup>13</sup>	Drain guide 1/8	•		
				<b>W</b> *14	Drain guide 1/4 Drain cock with barb fitting		•	•
				VV ····			-	•

**SMC** 



AWD30-D

						0	
			Symbol	Description		Body size	
					20	30	40
	]	Exhaust	—	Relieving type	٠	•	٠
	g	mechanism	Ν	Non-relieving type	•	•	٠
Id	<u> </u>		+				
nda	-	El aux alina ati au	—	Flow direction: Left to right	•	•	۲
<b>G</b> -standard	h	Flow direction	R	Flow direction: Right to left	•	•	•
à.	<u> </u>		+				
Semi			—	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa		•	
	i	Unit	<b>Z</b> * <sup>15</sup>	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	○*17	○*17	○*17
			<b>ZA</b> *16	Digital pressure switch: With unit selection function	∆* <sup>18</sup>	∆* <sup>18</sup>	∆* <sup>18</sup>
suppl 2 The a	ied loo issem	G, H, and M are not a ose at the time of ship oly consists of a brac ain port is Ø 10 One-	oment. ket and se	*7 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case,		the thread of <b>②</b> . tion of metal bowl 2 thread type: NPT	and 8 is not

- thread type: Rc, G) or Ø 3/8" One-touch fitting (2 Pipe thread type: NPT). \*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)
- \*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 12 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. The mounting screws are
- Cannot be used with M: Round type pressure gauge (with colour zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.
- $\ast 16\;$  For options: E1, E2, E3, E4
- \*17 ○: For the pipe thread type: NPT only
  \*18 △: Select with options: E1, E2, E3, E4.

# AWM20-D to AWM40-D Series AWD20-D to AWD40-D Series

### **Standard Specifications**

	Model		AWM20-D/AWD20-D	AWM30-D/AWD30-D	AWM40-D/AWD40-D						
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2						
Pressure gaug	e port size*1			1/8							
Fluid				Air							
Ambient and fl	uid temperatu	Jres*2		–5 to 60 °C (No freezing)							
Proof pressure	•			1.5 MPa							
Max. operating	pressure			1.0 MPa							
	Without auto	o drain		0.05 to 0.85 MPa							
Set pressure	Auto drain (I	N.C.)	0.1 to 0.85 MPa	0.15 to 0	.85 MPa						
range	Auto drain (I	N.O.)	—	0.1 to 0.	85 MPa						
Max. flow capa	aitu*3	[AWM]	150 l/min (ANR)	330 l/min (ANR)	820 l/min (ANR)						
мах. почесара	City	[AWD]	90 l/min (ANR)	180 l/min (ANR)	450 l/min (ANR)						
Nominal filtrati	on roting*4	[AWM]		0.3 $\mu$ m (Filtration efficiency: 99.9 %	)						
	on raung	[AWD]	0.01 μm (Filtration efficiency: 99.9 %)								
Outlet side oil	mist	[AWM]	Max. 1.0 mg/m³ (≈ 0.8 ppm)								
concentration*	\$5, *6	[AWD]	Max. 0.1 mg/m <sup>3</sup> (Before saturated with oil 0.01 mg/m <sup>3</sup> or less $\approx$ 0.008 ppm)								
Compressed a	ir purity	[AWM]		ISO 8573-1:2010 [ 3 : 4 : 3 ]							
class*7, *8		[AWD]		ISO 8573-1:2010 [ 1 : 4 : 2 ]							
Drain capacity			8 cm <sup>3</sup>	25 cm <sup>3</sup>	45 cm <sup>3</sup>						
Bowl material				Polycarbonate							
Bowl guard			Semi-standard (Steel) Standard (Polycarbonate)								
Construction				Relieving type							
Weight			0.23 kg	0.35 kg	0.66 kg						

 a ressure gauge connection threads are not available for F.H.L. Unit with a square embedded type pressure gauge or with a digital pressure switch.
 s2 -5 to 50 °C for the products with the digital pressure switch
 s3 Inlet pressure: 0.7 MPa, Outlet pressure: 0.5 MPa. Flow at 20 °C, atmospheric pressure, and 65 % of the relative humidity The max. flow capacity varies depending on the outlet pressure. Keep the air flow within the max. 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 side is 10 mg/m<sup>3</sup>, and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable
\*6 The bowl O-ring 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 14.

addition to the conditions above Conditions: When a new element is used, the oil mist concentration on the filter inlet

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

### **Bowl Assembly/Part Nos.**

Bowl	Drain discharge	Ducin a cut	Othern		Model		
material	mechanism	Drain port	Other	AWM20-D/AWD20-D	AWM30-D/AWD30-D	AWM40-D/AWD40-D	
		With drain cock	—	C2SF-D			
		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	—	—	
Polycarbonale		(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			
		With drain COCK	With bowl guard	C2SF-6C-A	C3SF-6-D	C4SF-6-D	
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-6W-D	C4SF-6W-D	
Nylon		With drain guide	—	C2SF⊡-6J-A			
INVIOIT		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF⊡-6J-D	C4SF⊡-6J-D	
		Normally closed	—	AD27-6-A	_		
	Automatic*1	(N.C.)	With bowl guard	AD27-6C-A	AD37□-6-D	AD47□-6-D	
	(Auto drain)	Normally open (N.O.)	With bowl guard	—	AD38□-6-D	AD48□-6-D	
		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	
wetal		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, --: O 10, N: O 3/8") Please contact SMC separately for psi and °F unit display specifications.



### **Option/Part Nos.**

				Model		
	Optional specification	ins	AWM20-D/AWD20-D	AWM30-D/AWD30-D	AWM40-D/AWD40-D	
Bracket as	sembly <sup>*1</sup>		AW23P-270AS	AR33P-270AS	AR43P-270AS	
Set nut			AR23P-260S	AR33P-260S	AR43P-260S	
		Standard	G36-1	0-□01	G46-10-□01	
	Round type	0.05 to 0.2 MPa setting	G36-4	I-⊡01	G46-4-⊡01	
Pressure	Round type	Standard	G36-10	01-L	G46-10-□01-L	
gauge <sup>*2</sup>	(with colour zone)	0.05 to 0.2 MPa setting	G36-4-	G46-4-⊡01-L		
	0	Standard	GC3-10AS-D	e cover only)]		
	Square embedded type <sup>*3</sup>	0.05 to 0.2 MPa setting	GC3-4AS-D	cover only)]		
		NPN output, Wiring bottom entry	ISE35-N-25-M	n body only)]* <sup>4</sup>		
Digital pro	oouro owitch	NPN output, Wiring top entry	ISE35-R-25-M	n body only)]*4		
Digital pre	ssure switch	PNP output, Wiring bottom entry	ISE35-N-65-M	n body only)]* <sup>4</sup>		
		PNP output, Wiring top entry	ISE35-R-65-M	n body only)]*4		

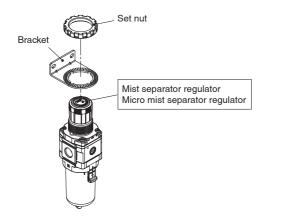
\*1 The assembly consists of a bracket and set nuts.

\*2 🗆 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 pressure gauge supply for both MPa and psi unit specifications.

\*3 Including one O-ring and 2 mounting screws. []: Pressure gauge cover only

\*4 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 the www.smc.eu.)

### AWM20 to 40-D, AWD20 to 40-D





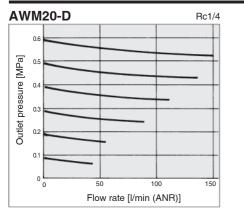
### **Replacement Parts**

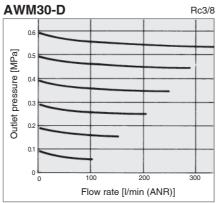
	Description		Part no.						
L	Jeschption	AWM20-D/AWD20-D	AWM40-D/AWD40-D						
Valve assemi	bly	AWM24P-090AS	AWM34P-090AS	AWM44P-090AS					
Element	AWM	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS					
assembly	AWD	AFD20P-060AS	AFD30P-060AS	AFD40P-060AS					
Diaphragm	Relieving type	AR24P-150AS	AR34P-150AS	AR44P-150AS					
assembly	Non-relieving type	AR24P-150AS-N	AR34P-150AS-N	AR44P-150AS-N					
Bowl seal		C2SFP-260S	C32FP-260S	C42FP-260S					
Bowl assemb	oly* <sup>1, *2</sup>	Refer to "Bowl Assembly/Part Nos."							

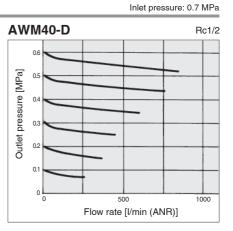
\*1 The bowl assembly comes with a bowl seal. \*2 Please contact SMC separately for psi and °F unit display specifications.

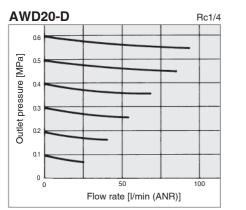
# AWM20-D to AWM40-D Series AWD20-D to AWD40-D Series

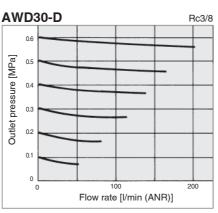
### Flow Rate Characteristics (Representative values)

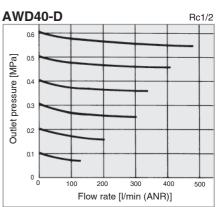




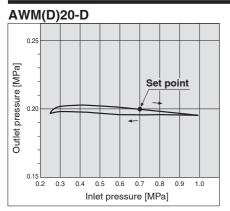


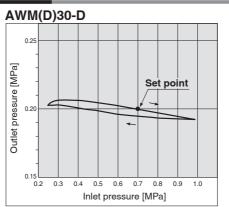




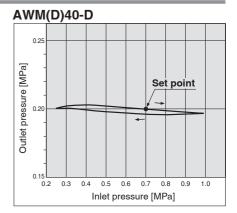


### Pressure Characteristics (Representative values)

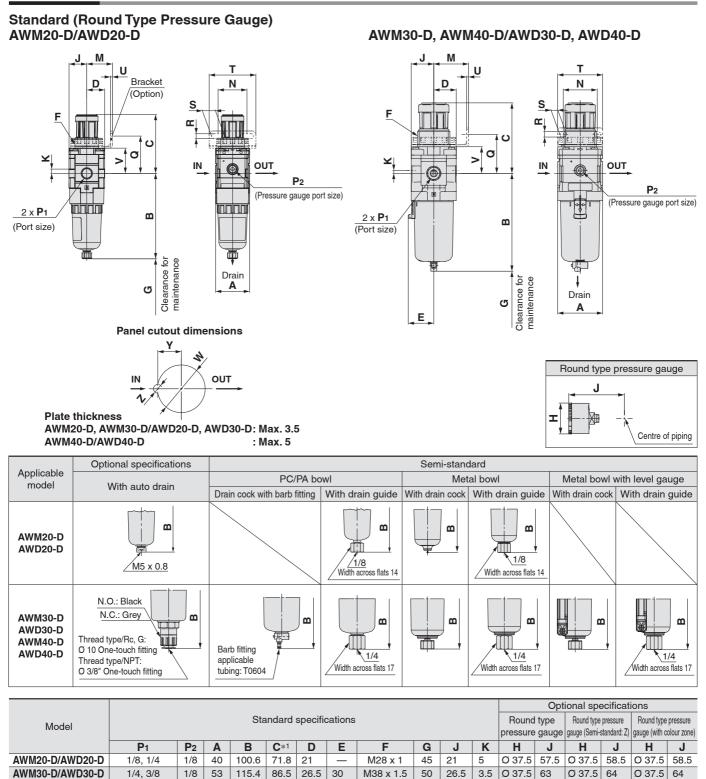




Conditions/Inlet pressure: 0.7 MPa, Outlet pressure: 0.2 MPa, Flow rate: 20 l/min (ANR)



### Dimensions



	Optional specifications											Semi-standard specifications							
Model			Broc	cket m	ount			Panel mount			With auto	PC/PA bowl		Metal bowl		Metal bowl with level gauge			
Model			Diac	AGI III	oum			Fanermount				drain	With barb	With drain	With drain	With drain	With drain	With drain	
												direant	fitting	guide	cock	guide	cock	guide	
	Μ	Ν	Q	R	S	Т	U	V	W	Y	Ζ	В	В	В	В	В	В	В	
AWM20-D/AWD20-D	30	34	43.9	5.4	15.4	55	2.3	29.7	28.5	14	6	117.9	—	104.4	100.4	106.9	—	_	
AWM30-D/AWD30-D	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7	157.1	123.9	122.2	117.8	122.3	137.8	142.3	
AWM40-D/AWD40-D	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	186.9	155.6	153.9	149.6	154.1	169.6	174.1	

38.4 M42 x 1.5

75

35.5

Ø 42.5 73

Ø 42.5 73

Ø 42.5 73

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

1/4, 3/8, 1/2

1/8

70

147.1

91.5

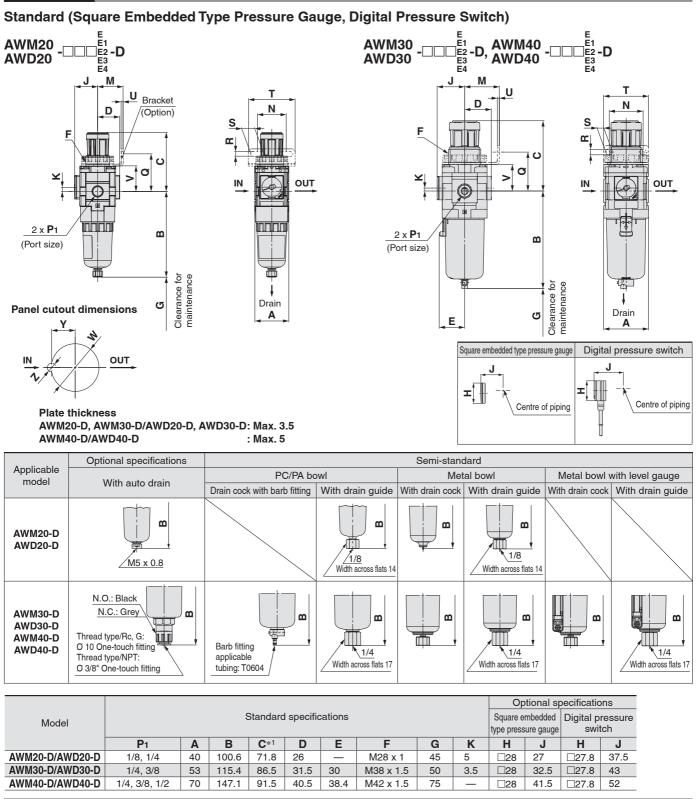
35.5

AWM40-D/AWD40-D



# AWM20-D to AWM40-D Series AWD20-D to AWD40-D Series

### Dimensions



					Opt	ional s	specifi	cations						Semi-	standarc	d specific	ations							
Model			Prov	cket m	ount				With					Panel mount auto					PC/PA bowl Metal bowl			Metal bowl with level gauge		
MODEI			Diau	sket m	Juni				Fallel III	ount		drain			With drain	1	With drain	With drain						
													fitting	guide	cock	guide	cock	guide						
	Μ	Ν	Q	R	S	Т	U	V	W	Υ	Ζ	В	В	В	В	В	В	В						
AWM20-D/AWD20-D	30	34	43.9	5.4	15.4	55	2.3	29.7	28.5	14	6	117.9	—	104.4	100.4	106.9		—						
AWM30-D/AWD30-D	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7	157.1	123.9	122.2	117.8	122.3	137.8	142.3						
AWM40-D/AWD40-D	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	186.9	155.6	153.9	149.6	154.1	169.6	174.1						
AWM30-D/AWD30-D	30 41	34 40	43.9 46	5.4 6.5	15.4 8	53	2.3	29.7 31.3	28.5 38.5	19	2	117.9 157.1	 123.9	104.4 122.2	100.4 117.8	106.9 122.3	 137.8	142						

**SMC** 

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



### Mist Separator Regulator/AWM20-D to AWM40-D Micro Mist Separator Regulator/AWD20-D to AWD40-D Made to Order nade

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	AWM20-D	AWM30-D	AWM40-D
	AWD20-D	AWD30-D	AWD40-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2

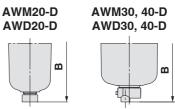
### (2) Long Bowl

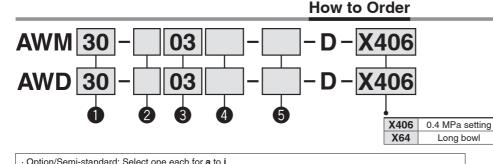
Drain capacity is greater than that of standard models.

### **Applicable Models/Drain Capacity**

Model Port size	AWM20-D	AWM30-D	AWM40-D
IVIOdei	AWD20-D	AWD30-D	AWD40-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Drain capacity [cm3]	19	43	88
B dimension [mm]*2	121.1	137.4	167.2

\*2 For polycarbonate bowls. Please contact SMC for other bowl materials.





· Op · Se	otion mi-s	sym stanc		re than or hen plura	ne specification is required, indicate in alphabetical order. I options are required, indicate them in alphanumeric order.	0.4	MPa Se	etting	Lo	ng Bo	wl
	<u> </u>	<u> </u>		Symbol	Description	20	Body size	40	20	D Body size 30	40
				—	Rc						
2	F	Pipe	thread type	N	NPT						
	<b>F</b> G										
				+				,			r
				01	1/8					_	—
3		Р	ort size	02	1/4						
	03 3/8										
				04	1/2					—	
				+							
				_	Without mounting option		•				
		а	Mounting	<b>B</b> *2	With bracket		•				
				Н	With set nut (for panel mount)						
				+							
			Float type		Without auto drain		•				—
		b	auto drain*3	<b>C</b> *4	Float type auto drain (N.C.): Drain port is closed when pressure is not applied.		•				—
	Option*1			<b>D</b> *5	Float type auto drain (N.O.): Drain port is open when pressure is not applied.					_	—
4	<u>ē</u>			+						-	
	b				Without pressure gauge		•				
	0		Pressure	E	Square embedded type pressure gauge (with limit indicator)						
			gauge*6	G	Round type pressure gauge (with limit indicator)		•				
		с		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*7	E3	Output: PNP output, Electrical entry: Wiring bottom entry		•			•	
				E4	Output: PNP output, Electrical entry: Wiring top entry						

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\*1 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.

\*2 The assembly consists of a bracket and set nuts.
\*3 The auto drain port is Ø 10 One-touch fitting (
Pipe thread type: Rc, G) or Ø 3/8" One-touch fitting (2) Pipe thread type: NPT).

\*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. 0.7 MPa pressure gauge for 0.4 MPa type (-X406).

\*7 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 N	IPa Se	etting	Lo	ng Bo	wl
	<u> </u>		Symbol	Description	20	Body size	40	20	D Body size 30	40
	d	Set pressure*8		0.05 to 0.85 MPa setting 0.02 to 0.2 MPa setting		-		•	•	•
	e	Bowl* <sup>9</sup>	+ 2 6 8 C 6C	Polycarbonate bowl Metal bowl Nylon bowl Metal bowl with level gauge With bowl guard With bowl guard (Nylon bowl)		•     •	•     •	• • • •	•     •	• • 
Semi-standard	f	Drain port*12	+ 	With drain cock Drain guide 1/8 Drain guide 1/4 Drain cock with barb fitting		• 	•  •		• 	•
Se	g	Exhaust mechanism	+ — N	Relieving type Non-relieving type		•	•	•	•	•
	h	Flow direction	+ — R +	Flow direction: Left to right Flow direction: Right to left		•	•	•	•	•
	i	Unit	+ Z* <sup>15</sup> ZA* <sup>16</sup>	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale Digital pressure switch: With unit selection function		● ○*17 △*18	● ○*17 △*18	● ○*17 △*18	● ○* <sup>17</sup> △* <sup>18</sup>	● ○* <sup>17</sup> △* <sup>18</sup>
press Refer 10 A bo	sure w r to ch owl gu	ithin the specific emical data on p ard is provided	ation ranç bage 12 fo as standa	specification pressure in some cases, but use is chemical resistance of the bowl. rd equipment (polycarbonate). *15 For the pipe thre This product is f (The SI unit type Cannot be used with	or overseas u is provided f M: Round type p	se only ac or use in J ressure gaug	apan.) e (with color :	zone). Availab	le by request	t for specia

\*11 A bowl guard is provided as standard equipment (nylon).

\*12 The combination of float type auto drain C and D is not available.

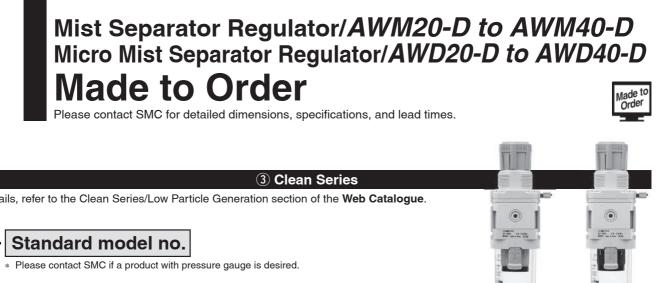
\*13 Without a valve function. The mounting screws are the same as the thread of **@**. \*14 The combination of metal bowl 2 and 8 is not available.

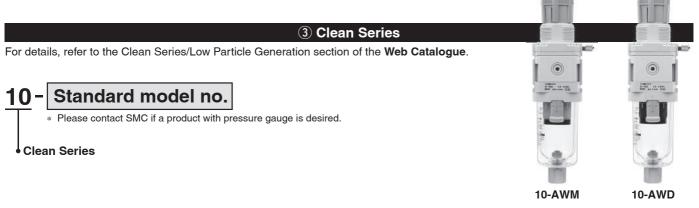
\*16 For options: E1, E2, E3, E4

\*17  $\bigcirc$ : For the pipe thread type: NPT only \*18  $\triangle$ : Select with options: E1, E2, E3, E4.

The digital pressure switch will be equipped with the unit selection function, setting to psi initially.

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### 4 Copper, Fluorine and Silicone-free + Low Particle Generation

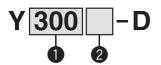
For details, refer to the Clean Series/Low Particle Generation section of the Web Catalogue.

### Standard model no. 21

• Copper, fluorine and silicone-free + Low particle generation

# AWM-D/AWD-D Series Spacer / Spacer with Bracket

### Spacer / Spacer with Bracket



Spacer (Y⊡-D)

Spacer with bracket (Y□T-D)

Symbol			Description	Body	y size [Applicable m	odel] 400
					400 [AWM40-D/AWD40-D]	
		—	Spacer	•	•	•
2	Spacer	т	Spacer with bracket	•	•	•





### **Standard Specifications**

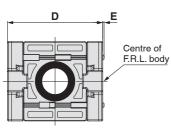
Fluid	Air		
Ambient and fluid temperatures	-5 to 60 °C (No freezing)		
Proof pressure	1.5 MPa		
Max. operating pressure	1.0 MPa		

### **Replacement Parts**

C				Part no.	
	Description	Material	Y200-D Y200T-D	Y300-D Y300T-D	Y400-D Y400T-D
	Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S

### Dimensions

### Spacer



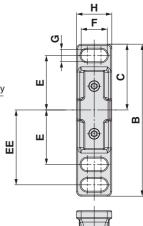




m

D K Centre of F.R.L. body

Spacer with bracket





Model	Α	В	С	D	Е	EE	F	G	Η	J	Κ	Applicable model
Y200T-D	3.2	67	29	51	24	33	11.5	5.5	15.5	3.5	30	AWM20-D AWD20-D
Y300T-D	4.2	85	42.5	67.5	35	—	14	7	20	6	41	AWM30-D AWD30-D
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	AWM40-D AWD40-D

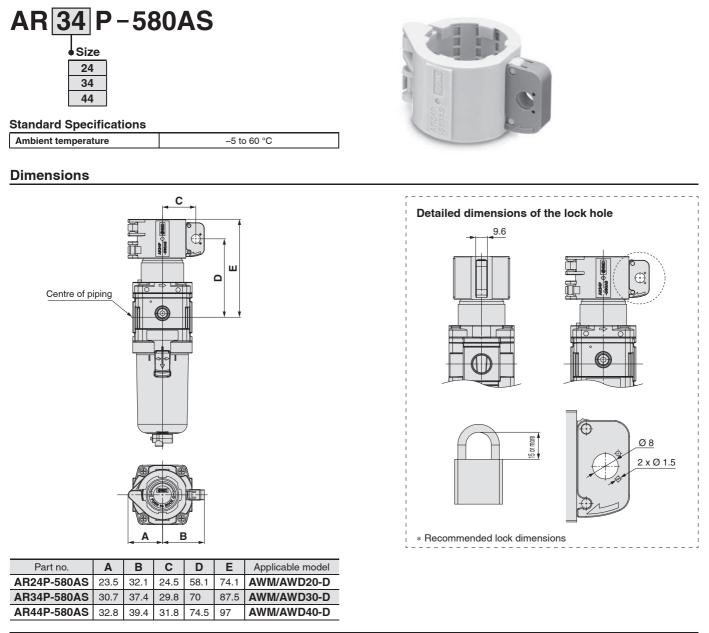
Model	Α	В	С	D	E	Applicable model
Y200-D	3.2	35	13.2	42	0.6	AWM20-D AWD20-D
Y300-D	4.2	43	16.2	53	—	AWM30-D AWD30-D
Y400-D	5.2	51	19.2	71		AWM40-D AWD40-D

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### **Knob Cover**

Can be mounted on the knob 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.





# AWM-D/AWD-D Series Specific Product Precautions 1

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

### **Design / Selection**

# 🕂 Warning

- 1. Residual pressure disposal (outlet pressure removal) is not possible for the AWM20-D to AWM40-D and AWD20-D to AWD40-D even though the inlet pressure is exhausted. To remove residual pressure, use the combination of a filter regulator with backflow function (AW20K-D to AW40K-D) and mist separator (AFM20-D to AFM40-D), or the combination of a filter regulator with backflow function (AW20K-D to AW40K-D), mist separator (AFM20-D to AFM40-D), and micro mist separator (AFD20-D to AFD40-D).
- 2. The standard bowl for the mist separator regulator and micro mist separator regulator is made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, or thread lock solutions.

### **Chemical Resistance of Polycarbonate or Nylon Bowl**

			Mat	ərial
Туре	Chemical name	Application examples	Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	х
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	x	0
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	х	Δ
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	х	Δ
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	х	Δ
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	х	х
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	х
Oil	Gasoline Kerosene	—	х	0
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	х	0
Ether	Methyl ether Ethyl ether	Brake oil additives	х	0
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	х	х
Others	Thread-lock fluid Seawater Leak tester	_	х	Δ
O: Esse	ntially safe	effects may occur. u: E	Effects will	occur.

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

### **Design / Selection**

### **A** Caution

1. Design the system so that the product 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.

### Air Source

# **A** Caution

1. When the element becomes clogged at an early stage, please check the air quality. In addition, early clogging can be prevented by attaching a pre-filter on the inlet side of the product.

### Maintenance

# \land 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** Warning

- **1.** Set the product 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.

# \land Caution

**1.** Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure.

Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.

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



2. When the bowl is installed on the AWM30-D to AWM40-D or AWD30-D to AWD40-D, install it 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.





# **AWM-D/AWD-D** Series Specific Product Precautions 2

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

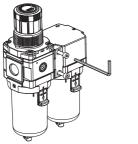
### Piping

# **Warning**

# 1. 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.

Recommended Torque Unit: N·m								
AWM20-D AWD20-D	AWM30-D AWD30-D	AWM40-D AWD40-D						
Y200T-D	Y300T-D	Y400T-D						
Y200-D	Y300-D	Y400-D						
0.36 ±0.036	1.2 ±0.05	1.2 ±0.05						
	AWM20-D AWD20-D Y200T-D Y200-D	AWM20-D AWD20-D         AWM30-D AWD30-D           Y200T-D         Y300T-D           Y200-D         Y300-D						



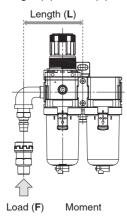
2 screws on the spacer with bracket or spacer

2. Place the spacer with bracket (or spacers) so that excessive moment is not applied to the spacer with bracket (or spacers) due to the weight of the product or the external force applied at the time of piping. If the moment including the own weight of the external piping exceeds the max. moment shown in the table below, support the external piping separately.

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·m
Applicable model	AWM20-D AWD20-D	AWM30-D AWD30-D	AWM40-D AWD40-D
Max. moment (M)	14.5	16	19.5

Max. moment ( $\mathbf{M}$ ) = Length ( $\mathbf{L}$ ) x Load ( $\mathbf{F}$ )



### Piping

# **Warning**

3. Connect piping/fittings using the recommended torque while holding the female thread side tightly.

Insufficient tightening torque can result in loose piping or sealing failure. Over tightening may break the thread. If the female side is not held while tightening, excessive force will be applied to the bracket directly, resulting in breakage.

Recommended Torque					
Connection thread	1/8	1/4	3/8	1/2	
Torque	7 to 9	12 to 14	22 to 24	28 to 30	

- 4. 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 product in place.
- 5. When mounting a One-touch fitting, refer to the Fittings and Tubing Precautions.

### Selection

# **A** Caution

1. Do not flow air exceeding the max. air flow rate.

If the max. air flow rate is momentarily exceeded, it may cause splashing of drainage and oil on the outlet side, and damage to the equipment.

# 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]

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

### [Scope]

[Purity Classes]

Can be used in various places in compressed air systems

### [Terms and Definitions]

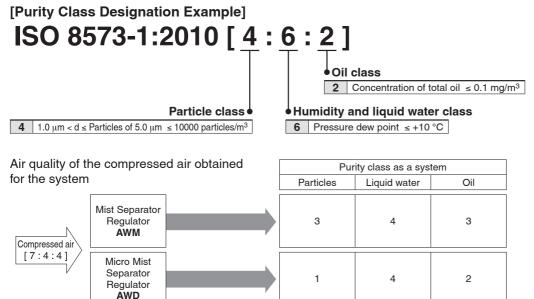
- Purity class: An index assigned for each classification obtained by dividing the concentration of each contaminant into ranges
- Particle: Small discrete mass of solid or liquid matter
- Humidity and liquid water: Water vapour (gas), Water droplets
- · Oil: Liquid oil, Oil mist, Vapor

Ling							
	Particles			Humidity and liquid water		Oil	
Class	Max. number of particles per cubic meter as a function of particle size d [µm] Max			Mass concentration Cp	Pressure dew point	Concentration of liquid water Cw	Concentration of total oil
	0.1 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0	[mg/m <sup>3</sup> ]	[°C]	[g/m <sup>3</sup> ]	[mg/m <sup>3</sup> ]
0	As specified by the equipment user or supplier and more stringent than class 1						
1	≤ 20000	≤ 400	≤ 10	—	≤ −70	—	≤ 0.01
2	≤ 400000	≤ 6000	≤ 100	—	≤ -40	—	≤ 0.1
3	—	≤ 90000	≤ 1000	—	≤ −20	—	≤ 1
4	—	—	≤ 10000	—	≤ +3	—	≤ 5
5	—	—	≤ 100000	—	≤ +7	—	—
6	—	—	—	0 < Cp ≤ 5	≤ +10	—	—
7	—	—	—	5 < Cp ≤ 10	—	Cw ≤ 0.5	—
8	—	—	—	—	—	0.5 < Cw ≤ 5	—
9	—	—	—	—	—	5 < Cw ≤ 10	—
х	—	—	—	Cp > 10	—	Cw > 10	> 5

### [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)



The class indicates the compressed air purity according to ISO 8573-1:2010 (JIS B 8392-1:2012) and indicates the max. 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)<sup>1)</sup>, and other safety regulations.

▲ Caution:	<b>Caution</b> indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
▲ Warning:	<b>Warning</b> indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
▲ Danger:	<b>Danger</b> indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

### ▲ Warning

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

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

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

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

- 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
- 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
- 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

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

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

### ▲ Caution

 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.

 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.

### Limited warranty and Disclaimer/Compliance Requirements

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

### Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. <sup>2)</sup> Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

### **Compliance Requirements**

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

## ▲ Caution

# SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.

Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

▲ Safety Instructions

### **SMC Corporation (Europe)**

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