


Modular Type Lubricator *AL Series*

Lubricator AL Series  P.460 to 465	Model	Port size	Option
	AL10-A	M5 x 0.8	Bracket (Except AL10-A)
	AL20-A	1/8, 1/4	
	AL30-A	1/4, 3/8	
	AL40-A	1/4, 3/8, 1/2	
	AL40-06-A	3/4	
	AL50-A	3/4, 1	
	AL60-A	1	

AC-A

AF-A

AF□-A

AR-A

AL-A

AW-A

AC-B

AF-A

AF□-A

AR-A

AL-A

AW-A

AW□

AF-G

E□

AV

AF

Lubricator

AL10-A to AL60-A

Symbol



AL10-A

AL20-A

AL40-A

How to Order

AL **30** - **03** **B** - **A**

① ② ③ ④ ⑤

- Option/Semi-standard: Select one each for a to d.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) AL30-03B-3RW-A

			Symbol	Description	①						
					Body size						
					10	20	30	40	50	60	
②	Pipe thread type	Nil	Metric thread (M5)		●	—	—	—	—	—	
			Rc		—	●	●	●	●	●	
			NPT		—	●	●	●	●	●	
			G		—	●	●	●	●	●	
+											
③	Port size	M5	M5 x 0.8		●	—	—	—	—	—	
		01	1/8		—	●	—	—	—	—	
		02	1/4		—	●	●	●	—	—	
		03	3/8		—	—	●	●	—	—	
		04	1/2		—	—	—	●	—	—	
		06	3/4		—	—	—	●	●	—	
		10	1		—	—	—	—	●	●	
+											
④	Option (Mounting)	Nil	Without mounting option		●	●	●	●	●	●	
		B <small>Note 1)</small>	With bracket		—	●	●	●	●	●	
+											
⑤	a	Bowl <small>Note 2) 3)</small>	Nil	Polycarbonate bowl	●	●	●	●	●	●	
			2	Metal bowl	●	●	●	●	●	●	
			6	Nylon bowl	●	●	●	●	●	●	
			8	Metal bowl with level gauge	—	—	●	●	●	●	
			C	With bowl guard	—	●	<small>Note 4)</small>	<small>Note 4)</small>	<small>Note 4)</small>	<small>Note 4)</small>	
			6C	With bowl guard (Nylon bowl)	—	●	<small>Note 5)</small>	<small>Note 5)</small>	<small>Note 5)</small>	<small>Note 5)</small>	
			+								
	b	Lubricant exhaust port	Nil	Without drain cock	●	●	●	●	●	●	
			3	With drain cock	●	●	●	●	●	●	
			3W <small>Note 6)</small>	Drain cock with barb fitting	—	—	●	●	●	●	
	+										
	c	Flow direction	Nil	Flow direction: Left to right	●	●	●	●	●	●	
			R	Flow direction: Right to left	●	●	●	●	●	●	
	+										
	d	Pressure unit	Nil	Name plate and caution plate: MPa	●	●	●	●	●	●	
			Z <small>Note 7)</small>	Name plate and caution plate: psi, °F	○ <small>Note 8)</small>	○ <small>Note 8)</small>	○ <small>Note 8)</small>	○ <small>Note 8)</small>	○ <small>Note 8)</small>	○ <small>Note 8)</small>	

Note 1) Option is not assembled and supplied loose at the time of shipment.

Note 2) Refer to Chemical data on page 463 for chemical resistance of the bowl.

Note 3) Refer to page 465-1 for 1000 cm³ tanks.

Note 4) A bowl guard is provided as standard equipment (polycarbonate).

Note 5) A bowl guard is provided as standard equipment (nylon).

Note 6) The combination of metal bowl: 2 and 8 is not available.

Note 7) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 8) ○: For pipe thread type: M5, NPT only

Standard Specifications

Model	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
Port size	M5 x 0.8	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 temperature	-5 to 60°C (with no freezing)						
Proof pressure	1.5 MPa						
Maximum operating pressure	1.0 MPa						
Minimum dripping flow rate (L/min (ANR)) ^{Note)}	4	15	1/4: 30 3/8: 40	1/4: 30 3/8: 40 1/2: 50	50	190	220
Oil capacity (cm³)	7	25	55	135			
Recommended lubricant	Class 1 turbine oil (ISO VG32)						
Bowl material	Polycarbonate						
Bowl guard	—	Semi-standard (Steel)	Standard (Polycarbonate)				
Weight (kg)	0.07	0.10	0.20	0.38	0.43	0.94	1.09

(Note) · 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.

Option/Part No.

Optional specifications	Model						
	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
Bracket assembly ^(Note)	—	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P-050AS	

(Note) Assembly of a bracket and 2 mounting screws

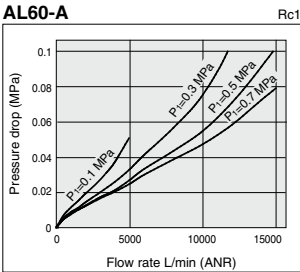
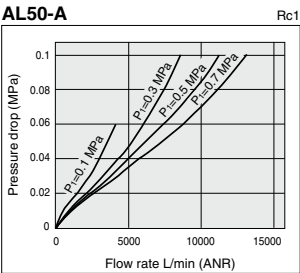
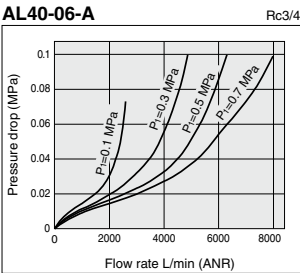
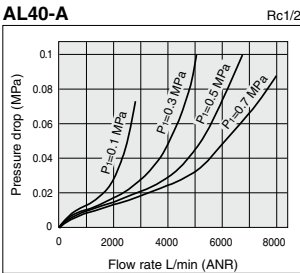
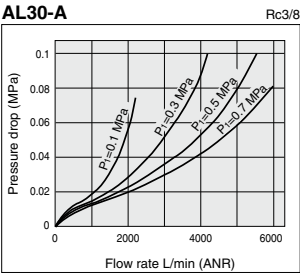
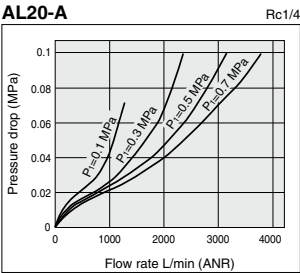
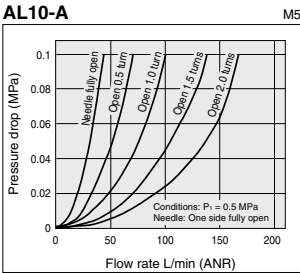
Bowl Assembly/Part No.

Bowl material	Lubricant exhaust port	Other	Model						
			AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
Polycarbonate bowl	Without drain cock	—	C1SL-A	C2SL-A	—	—			
		With bowl guard	—	C2SL-C-A	C3SL-A	C4SL-A			
	With drain cock	—	C1SL-3-A	C2SL-3-A	—	—			
		With bowl guard	—	C2SL-3C-A	C3SL-3-A	C4SL-3-A			
	Drain cock with barb fitting	With bowl guard	—	—	C3SL-3W-A	C4SL-3W-A			
Nylon bowl	Without drain cock	—	C1SL-6-A	C2SL-6-A	—	—			
		With bowl guard	—	C2SL-6C-A	C3SL-6-A	C4SL-6-A			
	With drain cock	—	C1SL-36-A	C2SL-36-A	—	—			
		With bowl guard	—	C2SL-36C-A	C3SL-36-A	C4SL-36-A			
	Drain cock with barb fitting	With bowl guard	—	—	C3SL-36W-A	C4SL-36W-A			
Metal bowl	Without drain cock	—	C1SL-2-A	C2SL-2-A	C3SL-2-A	C4SL-2-A			
		With level gauge	—	—	C3LL-8-A	C4LL-8-A			
	With drain cock	—	C1SL-23-A	C2SL-23-A	C3SL-23-A	C4SL-23-A			
		With level gauge	—	—	C3LL-38-A	C4LL-38-A			

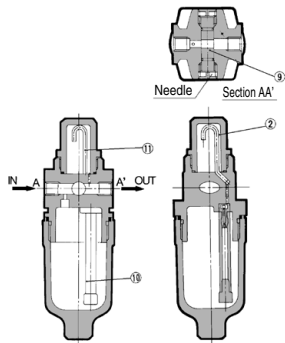
(Note) · Bowl assembly for the AL20-A to AL60-A models comes with a bowl seal.
· Please consult with SMC separately for psi and °F unit display specifications.

AL10-A to AL60-A Series

Flow Rate Characteristics (Representative values)



Working Principle: AL10 Type



A portion of the air introduced from the IN side pressurizes the lubricant inside the bowl. The remainder of the air passes through the needle ⑨, and flows to the OUT side. The differential pressure between the inside of the bowl and the inside of the sight dome ②, causes the lubricant inside the bowl into the oil passage ⑩. The lubricant drips from the dripping tube ⑪, and lubricates the OUT side. The amount of lubricant is adjusted by the needle ⑨ on the front face. Turning the needle clockwise increases the amount of the lubricant, and turning it counterclockwise until fully open shuts off the lubricant. The needle on the side that is not used should be left fully open.

⚠ Specific Product Precautions

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 387 to 391 for F.R.L. Precautions.

Selection

⚠ Warning

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

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment.

Chemical data for substances causing degradation (Reference)

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

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

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

Selection

⚠ Caution

- Use a check valve (AKM series) to prevent back flow of the lubricant when redirecting the air flow before the lubricator.

Maintenance

⚠ Warning

- For the AL10-A/AL20-A type, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurized condition.
- Adjustment of the oil regulating valve for models from the AL20-A to AL60-A should be carried out manually. Turning it counterclockwise increases the dripping amount, and turning it clockwise reduces the dripping amount. The use of tools etc. 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.

⚠ Caution

- Check the dripping amount once a day. Drip failure can cause damage to the components that need lubrication.

Mounting/Adjustment

⚠ Caution

- When the bowl is installed on the AL30-A to AL60-A, 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.

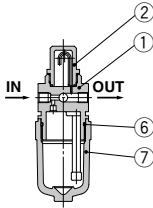


AC-A
AF-A
AF-A
AR-A
AL-A
AW-A
AC-B
AF-A
AF-A
AR-A
AL-A
AW-A
AW-
AF-G
E-
AV
AF

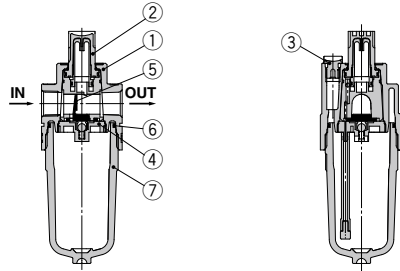
AL10-A to AL60-A Series

Construction

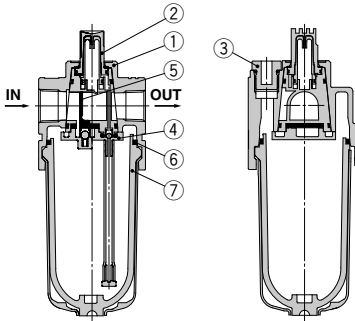
AL10-A



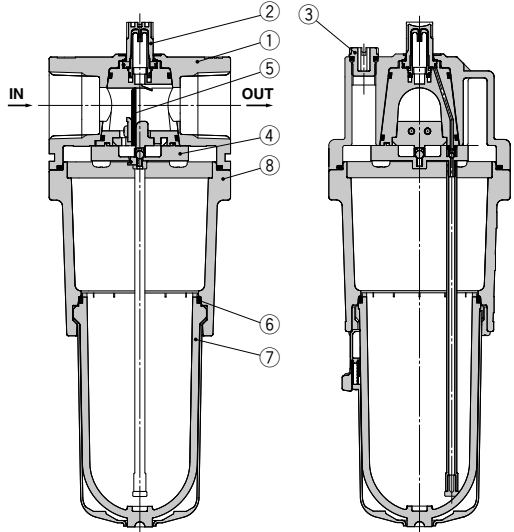
AL20-A



AL30-A/AL40-A



AL50-A/AL60-A



Component Parts

No.	Description	Material	Model	Color
1	Body	Zinc die-cast	AL10-A	White
		Aluminum die-cast	AL20-A to AL60-A	
8	Housing	Aluminum die-cast	AL50-A/AL60-A	White

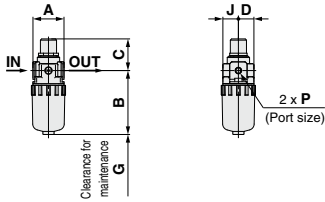
Replacement Parts

No.	Description	Material	Part no.						
			AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
2	Sight dome assembly	Polycarbonate	AL10P-080AS		AL32P-060AS	AL20P-080AS			
3	Lubrication plug assembly	—	—	AL22P-060AS	AL32P-060AS	AL42P-060AS			
4	Bumper retainer assembly	—	—	AL20P-030AS	AL30P-030AS	AL40P-030AS		AL50P-030AS	AL60P-030AS
5	Bumper (assembly)	Synthetic resin	—	AL20P-040S	AL30P-040S	AL40P-040S		AL50P-040AS	AL60P-040AS
6	Bowl seal	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S	C42FP-260S			
7	Bowl assembly ^(Note)	Polycarbonate	C1SL-A	C2SL-A	C3SL-A	C4SL-A			

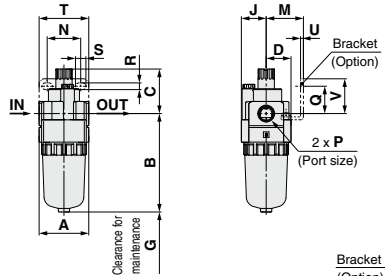
(Note) : Bowl seal is included for the AL20-A to AL60-A. Please consult with SMC separately for psi and °F unit display specifications.
 . Bowl assembly for the AL30-A to AL60-A models comes with a bowl guard (Material: Polycarbonate).

Dimensions

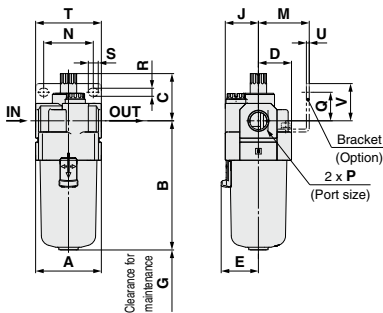
AL10-A



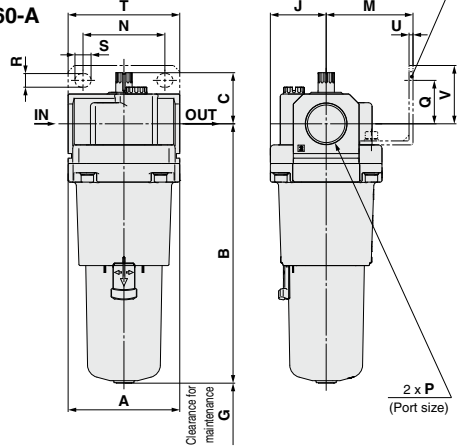
AL20-A












AL30-A to AL40-06-A



AL50-A AL60-A



Applicable model	AL10-A/AL20-A			AL30-A to AL60-A
Optional/Semi-standard specifications	With drain cock	Metal bowl	Metal bowl with drain cock	Metal bowl
Dimensions				

Applicable model	AL30-A to AL60-A				
Optional/Semi-standard specifications	With drain cock	Metal bowl with level gauge	Metal bowl with drain cock	Metal bowl with level gauge, with drain cock	Drain cock with barb fitting
Dimensions					

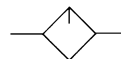
Model	Standard specifications							Optional specifications										Semi-standard specifications				
								Bracket mount										With drain cock	With barb fitting	Metal bowl	Metal bowl with drain cock	Metal bowl with level gauge
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V	B	B	B	B	B	B
AL10-A	M5 x 0.8	25	51.5	25.5	12.5	—	35	12.5	—	—	—	—	—	—	—	—	59.9	—	56.3	59.3	—	—
AL20-A	1/8, 1/4	40	79.3	35.9	20	—	60	20	30	27	22	5.4	8.4	40	2.3	28	87.7	—	84.5	87.5	—	—
AL30-A	1/4, 3/8	53	104.1	38.1	26.7	30	80	26.7	41	35	23	6.5	13	53	2.3	30	115.1	123.6	104.1	117.6	124.1	137.6
AL40-A	1/4, 3/8, 1/2	70	136.1	39.8	35.5	38.4	110	35.5	50	52	26	8.5	12.5	70	2.3	35	147.1	155.6	136.1	149.6	156.1	169.6
AL40-06-A	3/4	75	138.1	37.8	35.5	38.4	110	35.5	50	52	25	8.5	12.5	70	2.3	34	149.1	157.6	138.1	151.6	158.1	171.6
AL50-A	3/4, 1	90	209.1	41.2	45	—	110	45	70	66	35	11	13	90	3.2	47	220.1	228.6	209.1	222.6	229.1	246.2
AL60-A	1	95	223.1	44.7	47.5	—	110	47.5	70	66	35	11	13	90	3.2	47	234.1	242.6	223.1	236.6	243.1	256.6

Semi-standard Specifications: 1000 cm³ Tank

Lubricator: *AL30 to AL60*

Available for previous models (AL30 to 60).

Symbol



How to Order

AL **30** - **03** **B** - **1**

① ② ③ ④ ⑤

• Option/Semi-standard: Select one each for **a** to **c**.
 • Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
 Example) AL30-03B-1R

		Symbol	Description	① Body size					
				30	40	50	60		
②	Pipe thread type	Nil	Rc	●	●	●	●		
		N	NPT	●	●	●	●		
		F	G	●	●	●	●		
+									
③	Port size	02	1/4	●	●	—	—		
		03	3/8	●	●	—	—		
		04	1/2	—	●	—	—		
		06	3/4	—	●	●	—		
		10	1	—	—	●	●		
+									
④	Option (Mounting)	Nil	Without mounting option	●	●	●	●		
		B <small>Note 1)</small>	With bracket	●	●	●	●		
+									
⑤	Semi-standard	a	Bowl <small>Note 2)</small>	1	1000 cm³ tank	●	●	●	●
				10	1000 cm³ tank (with switch) Lowest limit ON	●	●	●	●
				11	1000 cm³ tank (with switch) Lowest limit OFF	●	●	●	●
	+								
	b	Flow direction	Nil	Flow direction: Left to right	●	●	●	●	
R			Flow direction: Right to left	●	●	●	●		
+									
c	Pressure unit	Nil	Name plate and caution plate for bowl in SI units: MPa	●	●	●	●		
		Z <small>Note 3)</small>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <small>Note 4)</small>	○ <small>Note 4)</small>	○ <small>Note 4)</small>	○ <small>Note 4)</small>		

Note 1) Option B is not assembled and supplied loose at the time of shipment.

Note 2) The standard bowl is a metal bowl with level gauge and lubricant discharge function. The material of the sight dome is polycarbonate resin. For chemical resistance, refer to the chemical data on page 463.

Note 3) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)

Note 4) ○: For pipe thread type: M5, NPT only

Semi-standard/Bowl Assembly Part No.

Semi-standard specifications			Model				
Bowl material	With switch		AL30	AL40	AL40-06	AL50	AL60
	Lowest limit ON	Lowest limit OFF					
1000 cm³ tank (Metal bowl with level gauge)	—	—	121538-1A				
	●	—	121538-1A-S1 [IS400-1 (Float switch only)]				
	—	●	121538-1A-S2 [IS400-2 (Float switch only)]				

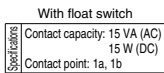
Note) • It is not possible to switch from a polycarbonate, nylon or metal bowl, or from a metal bowl with a level gauge to a 1000 cm³ tank. Please order the product separately.

• When adding a float switch to the 1000 cm³ tank, select IS400-1 or IS400-2.

• For other replacement parts, refer to the Operation Manual.

Dimensions

Semi-standard specifications: 1000 cm³ tank



Model	P	A	B	C	Bracket mount		Float switch
					Q	V	B
AL30	1/4, 3/8	53	324	38	25	—	374
AL40	1/4, 3/8, 1/2	70	333	40	18	—	383
AL40-06	3/4	75	333	38	16	—	383
AL50	3/4, 1	90	332	41	35	47	382
AL60	1	95	335	45	35	47	385