


Modular Type Lubricator *AL Series*

Lubricator AL Series  Pages 83 to 90	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

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

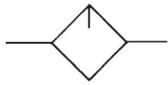
AL

AW

Lubricator

AL10-A to AL60-A

Symbol



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	—	Metric thread (M5)						
		Rc	●	—	—	—	—	—	
		NPT	—	●	●	●	●	●	
		G	—	●	●	●	●	●	
		+							
③	Port size	M5	●	—	—	—	—	—	
		01	—	●	—	—	—	—	
		02	—	●	●	●	—	—	
		03	—	—	●	●	—	—	
		04	—	—	—	●	—	—	
		06	—	—	—	●	●	—	
		10	—	—	—	—	●	●	
		+							
④	Option (Mounting)	—	●	●	●	●	●	●	
		B*1	—	●	●	●	●	●	
		+							
⑤	a	Bowl *2 *3	—	●	●	●	●	●	
			2	●	●	●	●	●	
			6	●	●	●	●	●	
			8	●	●	●	●	●	
			C	—	—	●	●	●	●
			6C	—	●	—*4	—*4	—*4	—*4
			+						
	b	Lubricant exhaust port	—	●	●	●	●	●	
			3	●	●	●	●	●	
			3W*6	—	—	●	●	●	
			+						
	c	Flow direction	—	●	●	●	●	●	
R			●	●	●	●	●		
		+							
d	Pressure unit	—	●	●	●	●	●		
		Z*7	○*8	○*8	○*8	○*8	○*8		

- *1 Option is not assembled and supplied loose at the time of shipment.
- *2 Refer to chemical data on page 86 for chemical resistance of the bowl.
- *3 Refer to page 89 for 1000 cm³ tanks.
- *4 A bowl guard is provided as standard equipment (polycarbonate).
- *5 A bowl guard is provided as standard equipment (nylon).
- *6 The combination of metal bowl: 2 and 8 is not available.
- *7 For pipe thread type: M5, NPT.
- *8 ○: For pipe thread type: M5, NPT only

Lubricator *AL10-A to AL60-A Series*

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)]^{*1}	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

- *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.

Option/Part No.

Optional specifications	Model						
	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
Bracket assembly^{*1}	—	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P-050AS	

*1 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	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	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	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			

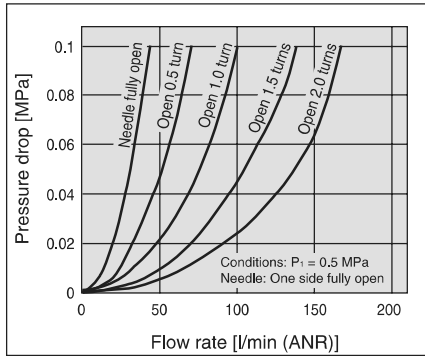
- * · Bowl seal is included for the AL20-A to AL60-A.
 · Please consult with SMC separately for psi and °F unit display specifications.

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

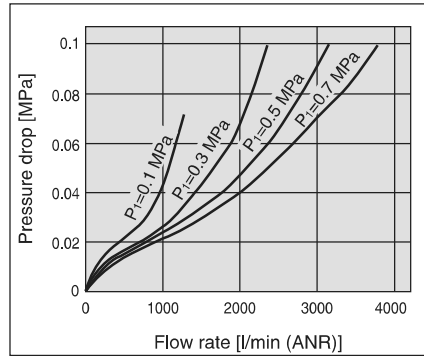
AL10-A to AL60-A Series

Flow Rate Characteristics (Representative values)

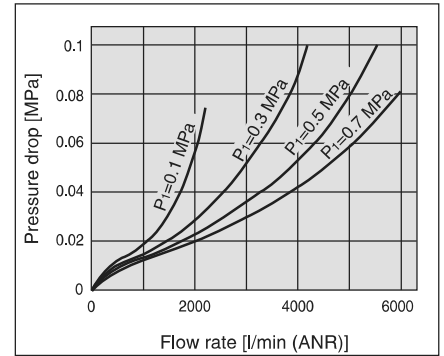
AL10-A M5



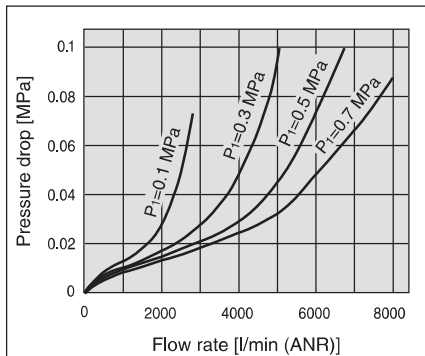
AL20-A Rc 1/4



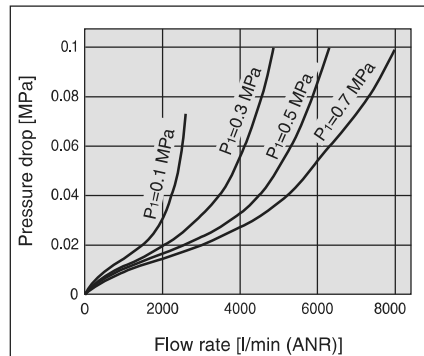
AL30-A Rc 3/8



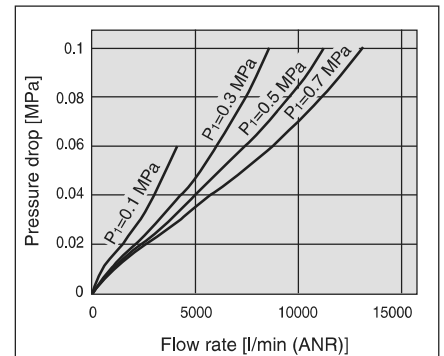
AL40-A Rc 1/2



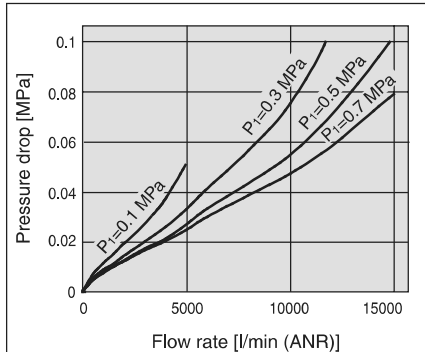
AL40-06-A Rc 3/4



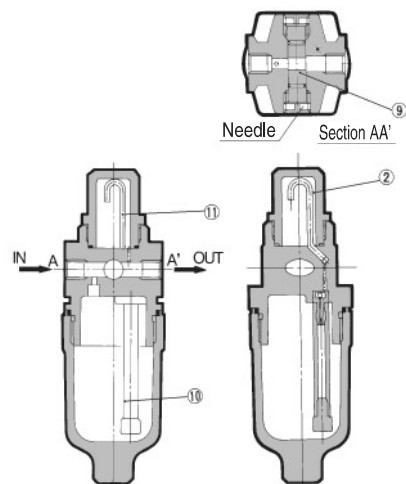
AL50-A Rc 1



AL60-A Rc 1



Working Principle: AL10



A portion of the air introduced from the IN side pressurises 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 the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual", <http://www.smc.eu>

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

○: Essentially safe △: Some effects may occur. X: 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, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurised 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.

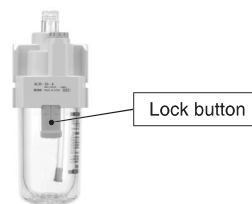
⚠ Caution

- 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

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

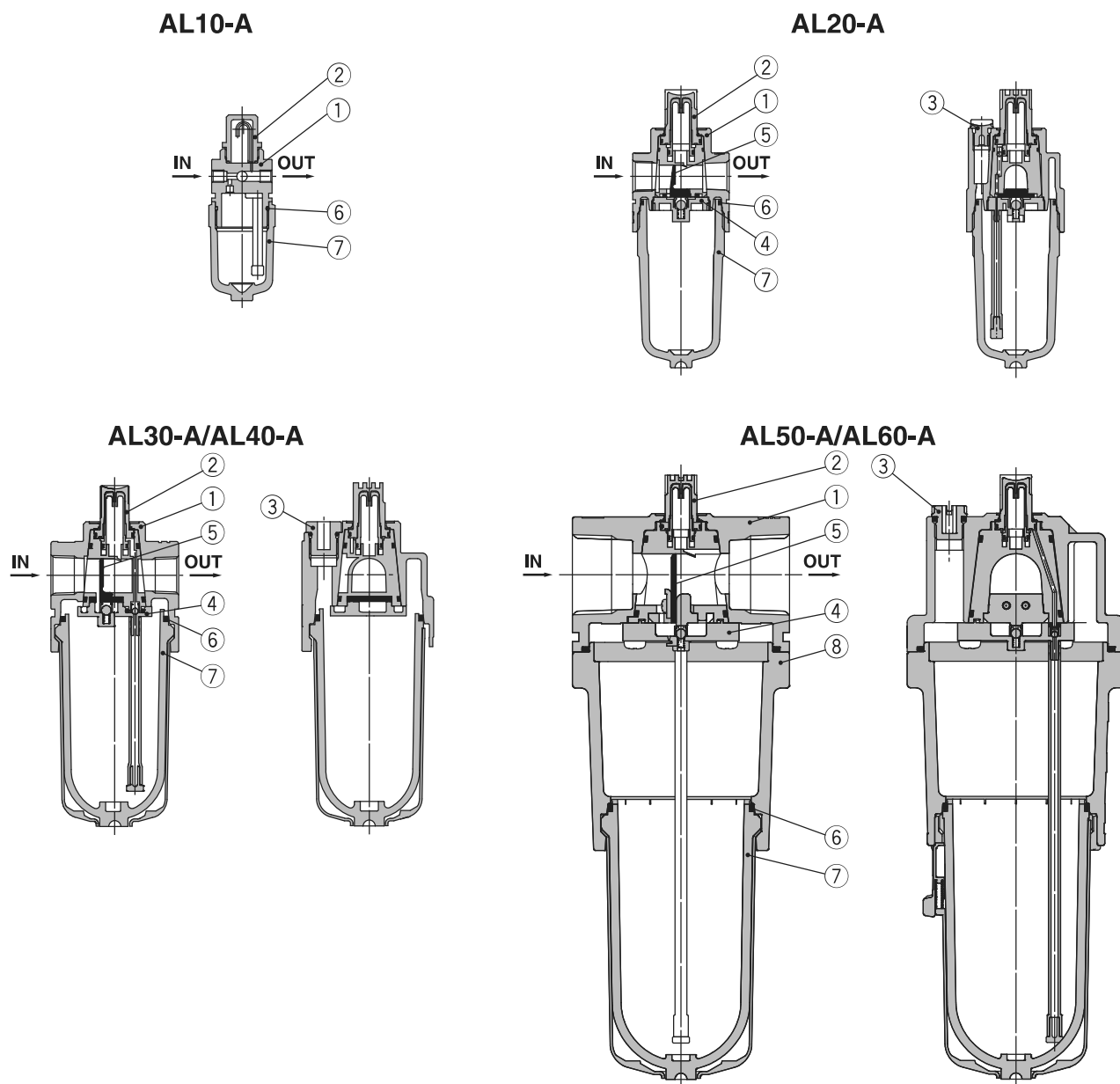
AR

AL

AW

AL10-A to AL60-A Series

Construction



Component Parts

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

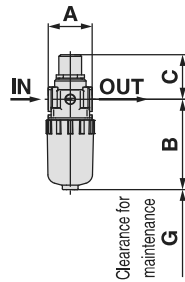
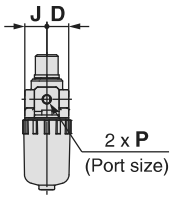
Replacement Parts

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			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 *1	Polycarbonate	C1SL-A	C2SL-A	C3SL-A	C4SL-A			

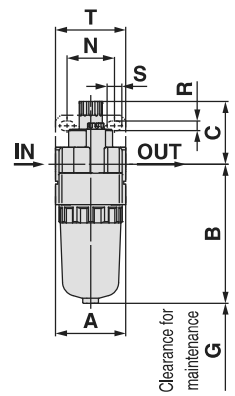
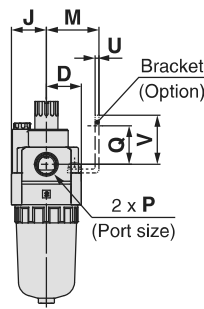
*1 · Bowl seal is included for the AL20-A to AL60-A. Please consult with SMC separately for psi and °F unit display specifications.
 · Bowl assembly for the AL30-A to AL60-A models comes with a bowl guard (Material: Polycarbonate).

Dimensions

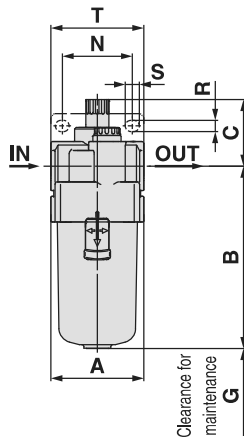
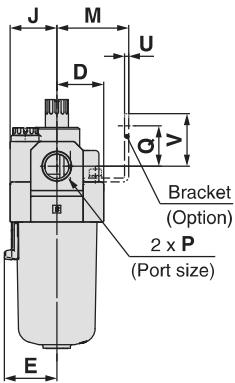
AL10-A



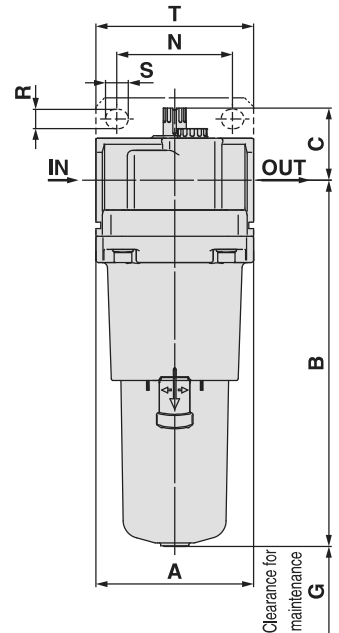
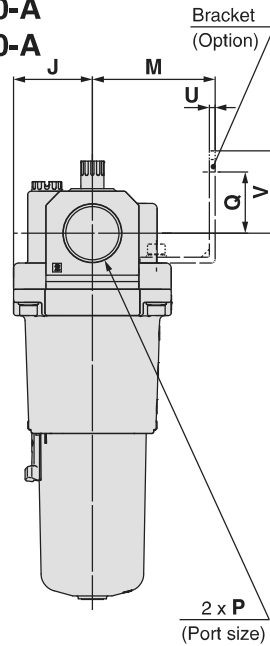
AL20-A



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					 Barb fitting applicable tubing: T0604

Model	Standard specifications																Optional specifications				Semi-standard specifications			
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V	Bracket mount		With drain cock	With barb fitting	Metal bowl	Metal bowl with drain cock	Metal bowl with level gauge	Metal bowl with level gauge, with drain cock
																	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, 1/2	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	—	—

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