

Regulator *AR10 to 60*

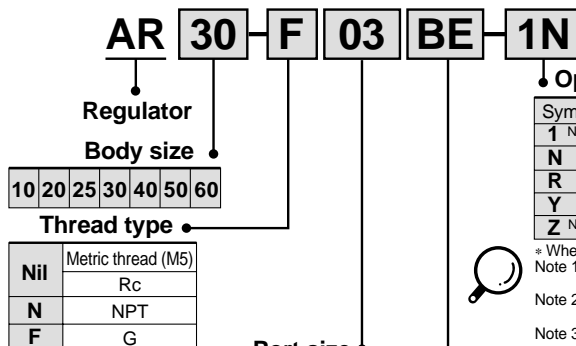
How to Order



AR20



AR40



- **Optional specifications**

Symbol	Description	Applicable model
1 <small>Note 2)</small>	0.02 to 0.2MPa setting	AR10 to 60
N	Non-relieving	AR10 to 60
R	Flow direction: Right to left	AR10 to 60
Y	Upward handle	AR10 to 60
Z <small>Note 3)</small>	Name plate and pressure gauge in imperial units (PSI, °F)	AR10 to 60

* When more than one specification is required, indicate in ascending alphanumeric order.
Note 1) This product is for overseas use only according to the new Measurement Law.
(The SI unit type is provided for use in Japan.)

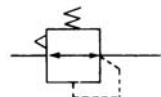
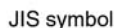
Note 2) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2MPa or more.

Note 3) For M5 and NPT thread types.

- **Accessories**

Symbol	Description	Applicable model
Nil	—	—
B	With bracket	AR10 to 60
E	With square embedded type pressure gauge (with limit indicator)	AR20 to 60
G	With round pressure gauge (without limit indicator)	AR10
	With round pressure gauge (with limit indicator)	AR20 to 60
H	With set nut (for panel mount)	AR10 to 40

Note 1) Optional parts are not assembled and are supplied loose at the time of shipment (except for option E).



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Accessory/Optional specification combinations

⊙: Combination available

○: Varies depending on the model

: Combination not available

△ : Available only with NPT thread

Combination Accessory/Optional specifications		Symbol	Accessory				Optional specification					Applicable regulator		
			B	E	G	H	1	N	R	Y	Z	AR10	AR20 to 40	AR50 to 60
Accessories	With bracket (with set nut)	B		○	⊙		⊙	⊙	⊙	⊙	△	⊙	⊙	⊙
	Square embedded type pressure gauge	E	⊙			⊙	⊙	⊙	⊙	⊙	△		⊙	⊙
	Round pressure gauge	G	⊙			⊙	⊙	⊙	⊙	⊙	△	⊙	⊙	⊙
	With set nut (for panel mount)	H		○	⊙		⊙	⊙	⊙	⊙	△	⊙	⊙	
Optional specifications	0.02 to 0.2MPa setting	−1	⊙	○	⊙	⊙		⊙	⊙	⊙	△	⊙	⊙	⊙
	Non-relieving type	−N	⊙	○	⊙	⊙	⊙		⊙	⊙	△	⊙	⊙	⊙
	Flow direction: Right to left	−R	⊙	○	⊙	⊙	⊙		⊙	⊙	△	⊙	⊙	⊙
	Upward handle	−Y	⊙	○	⊙	⊙	⊙	⊙		⊙	△	⊙	⊙	⊙
	Name plate and pressure gauge in imperial units (PSI, F)	−Z	△	△	△	△	△	△	△	△		△	△	△

Standard specifications

Model	AR10	AR20	AR25	AR30	AR40	AR40-06	AR50	AR60
Port sizes	M5	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1
Fluid	Air							
Proof pressure	1.5MPa							
Maximum operating pressure	1.0MPa							
Set pressure range	0.05 to 0.7MPa	0.05 to 0.85MPa						
Pressure gauge port size ^{Note 1)}	Rc 1/16 ^{Note 2)}	Rc, NPT, G 1/8	Rc, NPT, G 1/8	Rc, NPT, G 1/8	Rc, NPT, G 1/4	Rc, NPT, G 1/4	Rc, NPT, G 1/4	Rc, NPT, G 1/4
Relief pressure	Set pressure + 0.05MPa ^{Note 3)} [at relief flow rate of 0.1L/min (ANR)]							
Ambient and fluid temperature	-5 to 60°C (with no freezing)							
Construction	Relieving type							
Weight (kg)	0.06	0.26	0.21	0.29	0.44	0.47	1.17	1.22



Note 1) Pressure gauge connection threads are not required for regulator with a square embedded type pressure gauge (AR20 to AR60).

Note 2) Use a bushing (part no: 131368) when connecting the R 1/8 pressure gauge to the R 1/16 gauge port.

Note 3) Except for AR10.

Accessory part no.

[illegible]

Note 1) Assembly includes a bracket and set nuts.

Note 2) □ in part numbers for a round pressure gauge indicates a type of connection thread. No indication is necessary for R; however, indicate N for NPT.

Contact SMC regarding the connection thread NPT and pressure gauge supply for PSI unit specifications.

Note 3) For 1.0MPa.

Note 4) Includes one O-ring and 2 mounting screws.

Note 5) Assembly includes a bracket and 2 mounting screws

Note 6) Contact SMC regarding the set nuts for AR50 and AR60.

AR10 to 60

⚠ Specific Product Precautions

Be sure to read before handling.
Refer to pages 75 through 78 for safety instructions and F.R.L. unit precautions.

Mounting & Adjustment

⚠ Warning

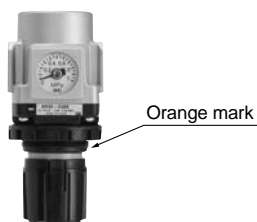
1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the knob excessively can cause damage to the internal parts.
2. The pressure gauge included with regulators for 0.02 to 0.2MPa setting is for up to 0.2MPa use only. Exceeding 0.2MPa of pressure can damage the gauge. Nevertheless, the gauge for the AR10 regulator with 0.02 to 0.2MPa setting is for up to 1.0MPa use.
3. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

⚠ 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.

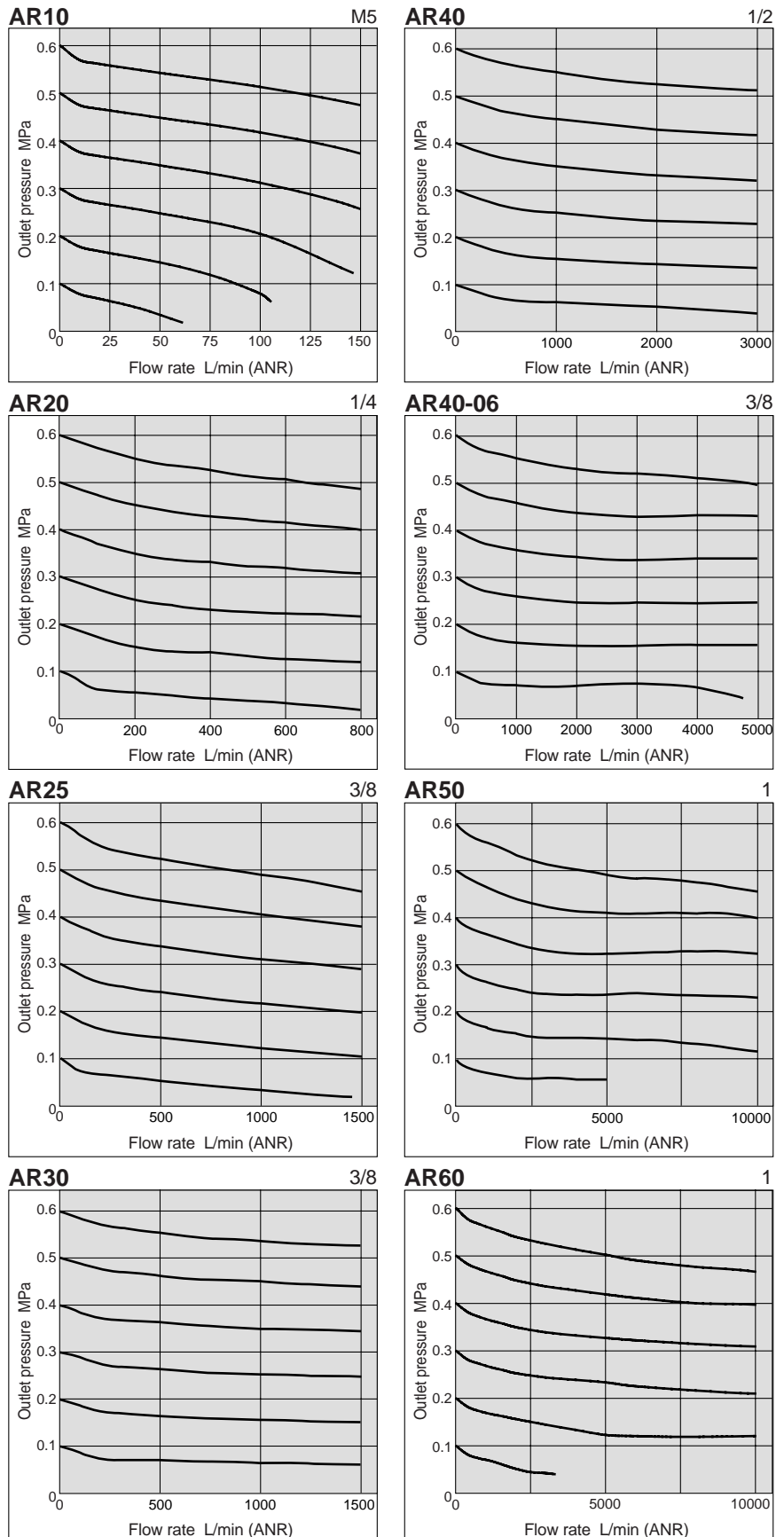
- Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
- Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e.,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



2. A knob cover is available to prevent careless operation of the knob. Refer to Features 1 for details.
3. Contact SMC when using the regulator between a solenoid valve and an actuator.

Flow Characteristics (Representative values)

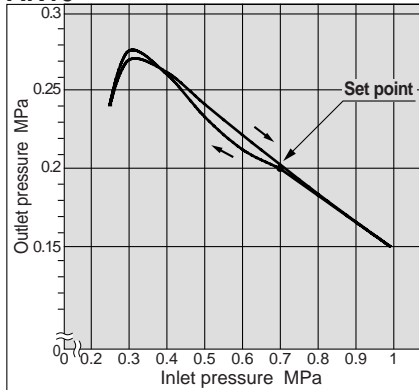
Condition: Inlet pressure 0.7MPa



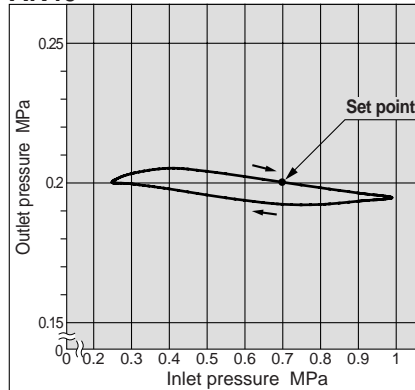
Pressure Characteristics (Representative values)

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

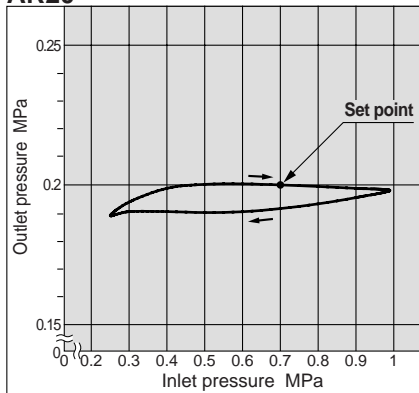
AR10



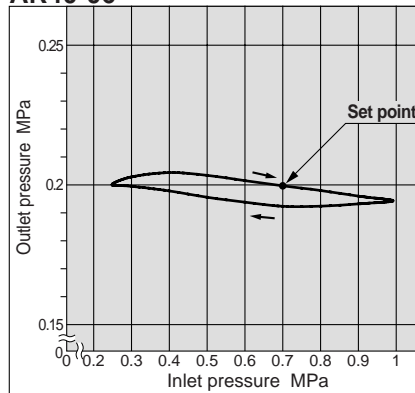
AR40



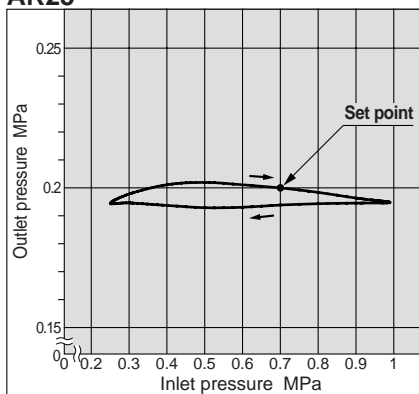
AR20



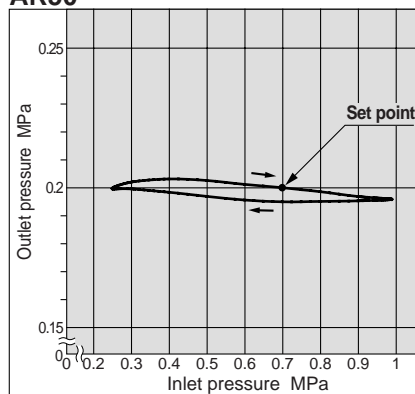
AR40-06



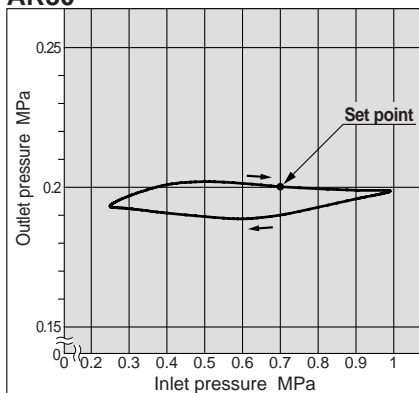
AR25



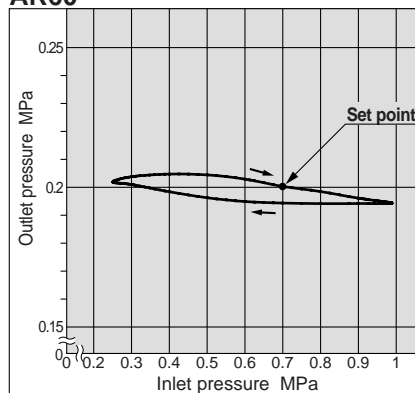
AR50



AR30

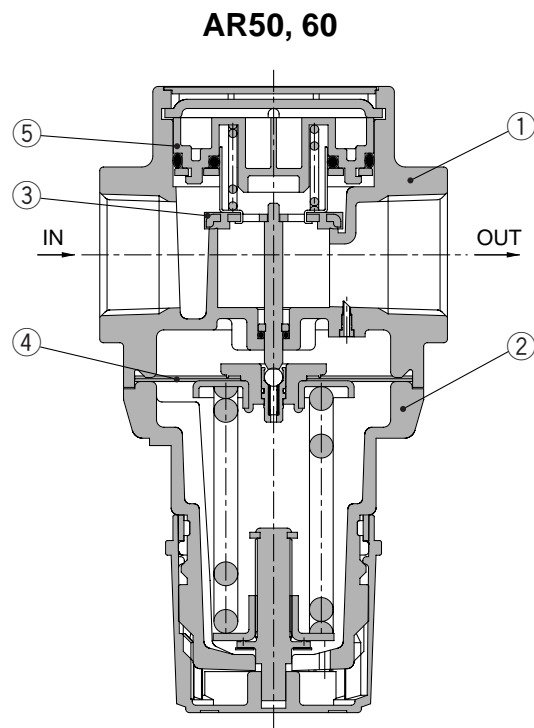
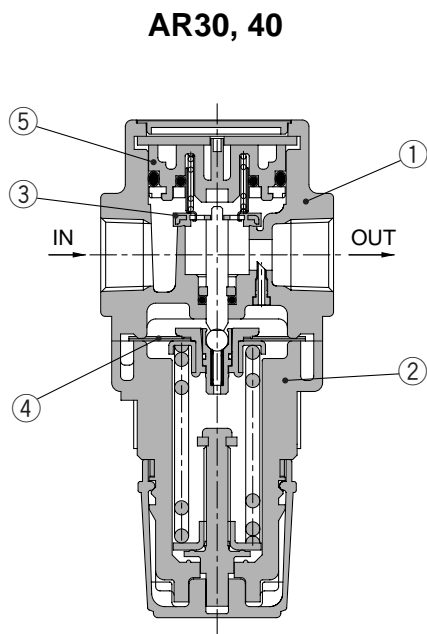
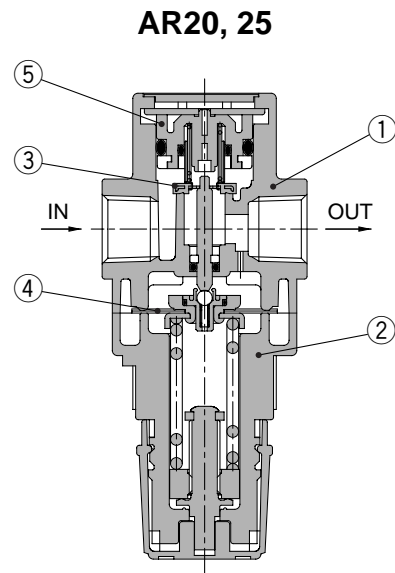
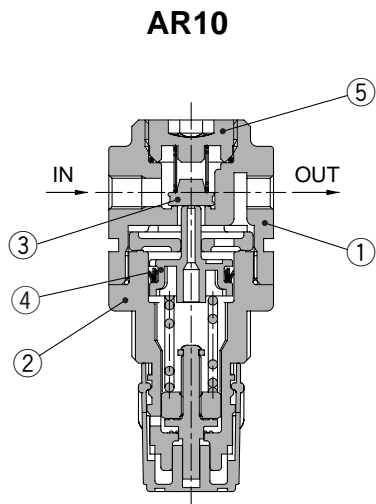


AR60



AR10 to 60

Construction




Parts list

No.	Description	Material			Note
		AR10, 20	AR25 to 40 (-60)	AR50, 60	
1	Body	Zinc die-cast	Aluminum die-cast		Platinum silver
2	Bonnet	Polyacetal		Aluminum die-cast	Black

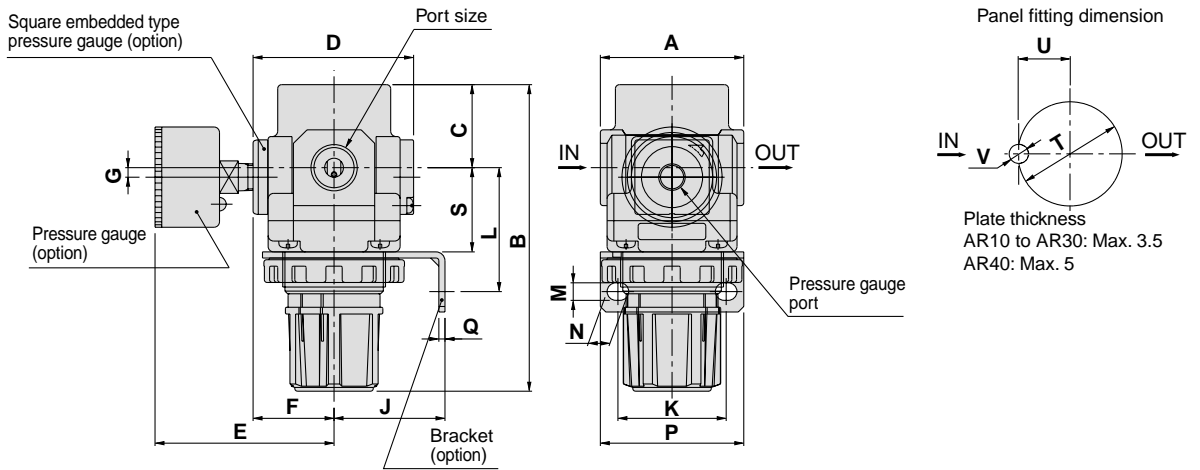
Replacement parts

No.	Description	Materials	Part no.							
			AR10	AR20	AR25	AR30	AR40	AR40-06	AR50	AR60
3	Valve assembly	Stainless steel Brass, HNBR	AR10P-090S	AR20P-090AS	AR25P-090AS	AR30P-090AS	AR40P-090AS	AR40P-090AS	AR50P-090AS	AR60P-090AS
4	Diaphragm assembly	Weatherability NBR	AR10P-150AS <small>(Note)</small>	AR20P-150AS	AR25P-150AS	AR30P-150AS	AR40P-150AS	AR40P-150AS	AR50P-150AS	AR50P-150AS
5	Valve guide assembly	POM	131329	AR20P-050AS	AR25P-050AS	AR30P-050AS	AR40P-050AS	AR40P-050AS	AR50P-050AS	AR60P-050AS

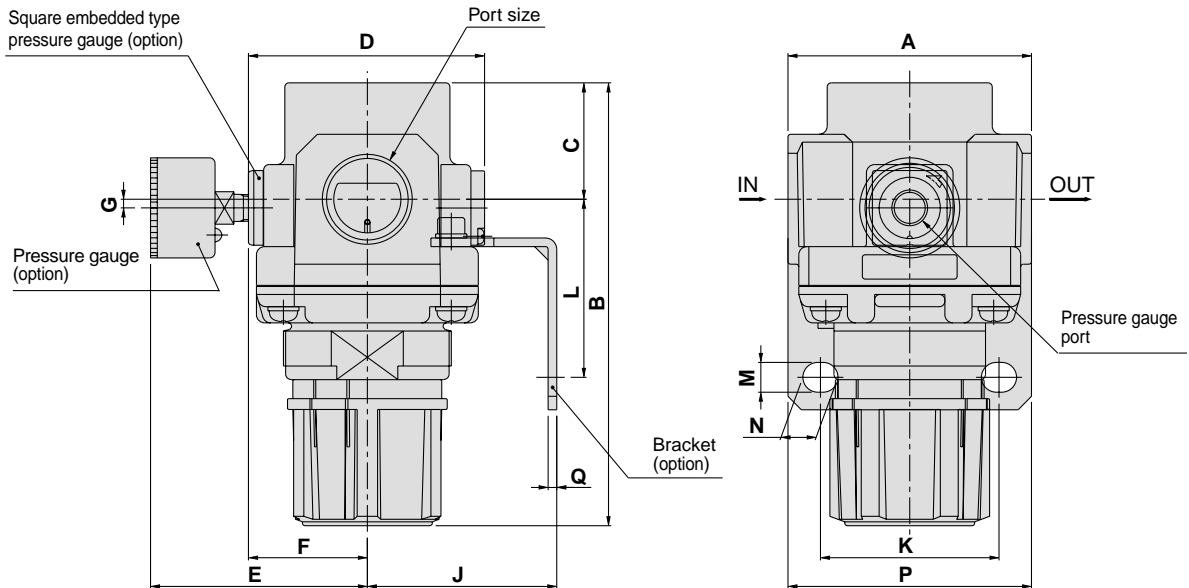
 Note AR10 is a piston and gasket (KSYP-13) type assembly.

Dimensions

AR10 to 40



AR50, 60



Model	Port sizes	Standard specification				Accessory specification													
						With pressure gauge			Bracket mounting size							Panel mount			
		A	C	B	D	E	F	G	J	K	L	M	N	P	Q	S	T	U	V
AR10	M5 x 0.8	25	11	58	25	26	—	0	25	28	30	4.5	6.5	40	2	18	18.5	—	—
AR20	1/8, 1/4	40	26.5	94	57	65	29.5	2 Note)	30	34	44	5.4	15.4	55	2.3	25	28.5	14	6
AR25	1/4, 3/8	53	28	101	55	64	28.5	0	30	34	44	5.4	15.4	55	2.3	26	32.5	16	6
AR30	1/4, 3/8	53	31	116	59	66	30.5	3.5	41	40	46	6.5	8	53	2.3	31	38.5	19	7
AR40	1/4, 3/8, 1/2	70	36	128	68	74	35	3.5	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7
AR40-06	3/4	75	36	129	68	74	35	3	50	54	56	8.5	10.5	70	2.3	37	42.5	21	7
AR50	3/4, 1	90	43	169	87	84	44.5	3.3	70	66	65.8	11	13	90	3.2	—	—	—	—
AR60	1	95	46	176	87	84	44.5	3.3	70	66	65.8	11	13	90	3.2	—	—	—	—

Note) For AR20 only, the position of the pressure gauge is above the center of the piping.

Regulator AR20 to 60 Made to Order Specifications

Contact SMC for detailed dimensions, specifications, and lead times.



① Special Temperature Environment

Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) regions.

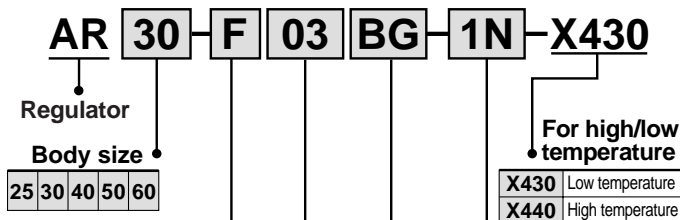
Specifications

Part no.	-X430	-X440
Environment	Low temperature	High temperature
Ambient temperature	-30 to 60°C	-5 to 80°C
Fluid temperature	-5 to 60°C (with no freezing)	
Material	Rubber parts	Special NBR
	Main metal parts	FPM

Applicable models

Model	AR25	AR30	AR40	AR40-06	AR50	AR60
Port size	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1

How to Order



Note 1) Optional parts are not assembled and are supplied loose at the time of shipment.

Note 2) Mounting thread for pressure gauge: 1/8 for AR25 to 30; 1/4 for AR40 to 60
Pressure gauge type: G43

Optional specifications

Symbol	Description	Applicable model
1 Note 3)	0.02 to 0.2MPa setting	AR25 to 60
N	Non-relieving type	AR25 to 60
R	Flow direction: Right to left	AR25 to 60
Y	Upward handle	AR25 to 60
Z Note 4)	Name plate and pressure gauge in imperial units (PSI, °F)	AR25 to 60

* When more than one specification is required, indicate in ascending alphanumeric order.

Note 3) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2MPa or more.

Note 4) For thread type 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 5) Consult SMC for detailed dimensions and available attachments and options.

Note 6) Comes with T type handle.

② High Pressure

Strong materials are used in the manufacturing of air filters intended for high pressure operation. Also construction modification allows a wider regulating pressure range.

Specifications

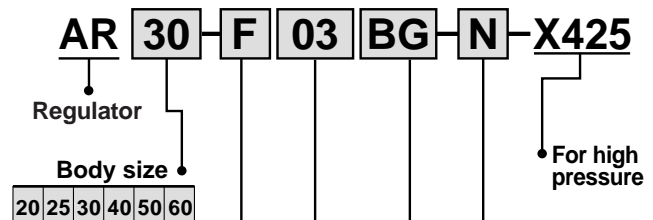
Part no.	-X425
Proof pressure	3.0MPa
Maximum operating pressure	2.0MPa
Set pressure range	0.1 to 1.6MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)



Applicable models

Model	AR20	AR25	AR30	AR40	AR40-06	AR50	AR60
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1

How to Order



Note 1) Optional parts are not assembled and are supplied loose at the time of shipment.

Note 2) Mounting thread for pressure gauge: 1/8 for AR20 to 30; 1/4 for AR40 to 60

Optional specifications

Symbol	Description	Applicable model
N	Non-relieving	AR20 to 60
R	Flow direction: Right to left	AR20 to 60
Y	Upward handle	AR20 to 60
Z Note 3)	Name plate and pressure gauge in imperial units (PSI, °F)	AR20 to 60

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