

Pilot Operated Regulator

AR425 to 935

Standard Specifications

Model	AR425	AR435	AR625	AR635	AR825	AR835	AR925	AR935
Port size	1/4, 3/8, 1/2		3/4, 1		1¼, 1½		2	
Fluid	Air							
Proof pressure	1.5MPa							
Max. operating pressure	1.0MPa							
Set pressure range MPa ⁽¹⁾	0.05 to 0.83	0.02 to 0.2	0.05 to 0.83	0.02 to 0.2	0.05 to 0.83	0.02 to 0.2	0.05 to 0.83	0.02 to 0.2
Air consumption ⁽²⁾	5 ℓ/min (ANR) (At maximum pressure)							
Pressure gauge port size	1¼							
Ambient and fluid temperature	−5 to 60℃ (Non-freezing)							
Construction	Internal pilot relieving style (Pilot air is always bleeding.)							
Weight (kg)	0.7		1.1		2.5		4.5	

Note 1) Outlet pressure range: P₂ is 90% of P₁ or less. Note 2) Air consumption differs depending on the set pressure.

Accessories (Options) Part No.

Description	Model	Part No.
Bracket	AR4□5	B24P
	AR6□5	B25P
	AR8□5	—
	AR9□5	—
Pressure gauge with limit indicator ⁽¹⁾	G46-10-□02(Max. 1.0MPa), G46-2-□02(Max. 0.2MPa)	

Note 1) - In the gauge part no. (e.g. G46-10-□02) □ indicate kind of the connecting thread.
- Put nothing for Rc(PT) and "N" for NPT thread. Consult SMC for NPT pressure gauge.

How to Order

Internal pilot operated relieving style regulator



AR8□5



AR6□5



AR6□5-□□BG



AR425-□□BG

E **AR** **4** **25** — **F** **02** **BG** — **R**

Regulator

Body size

4	1/2
6	1
8	1 1/2
9	2

Ordering source area code

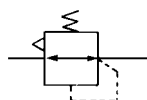
-	Japan, Asia Australia
E	Europe
N	North America

Set pressure range

25	0.05 to 0.83MPa
35*	0.02 to 0.2MPa

*Only the adjusting spring is different from "AR*25".

JIS symbol



Option

Blank	None
R	Reverse flow

Accessories (Options)

Symbol	Description	Applicable model
Blank	—	—
B	Bracket	AR4□5-6□5
G	Gauge	G46-10-02 AR□25
		G46-2-02 AR□35

Port size

02	1/4
03	3/8
04	1/2
06	3/4
10	1
12	1 1/4
14	1 1/2
20	2

Thread

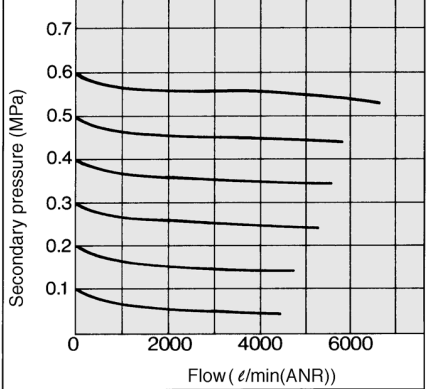
-	Rc(PT)
N	NPT
F	G(PF)

AR425 to 935

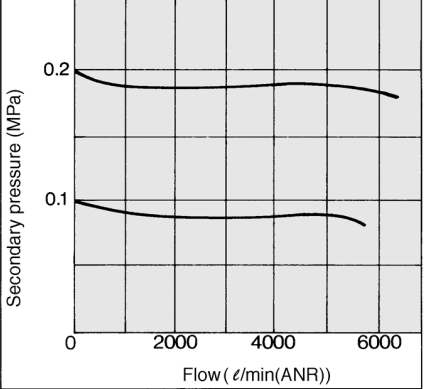
Flow Characteristics

Supply pressure: 0.7MPa

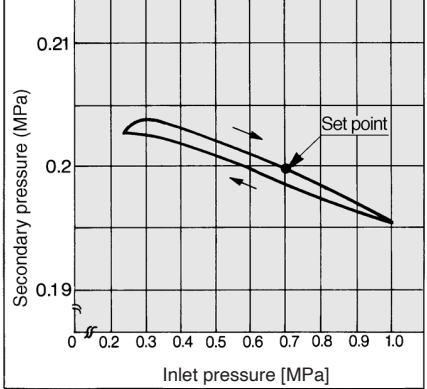
AR425 Rc(PT)1/2



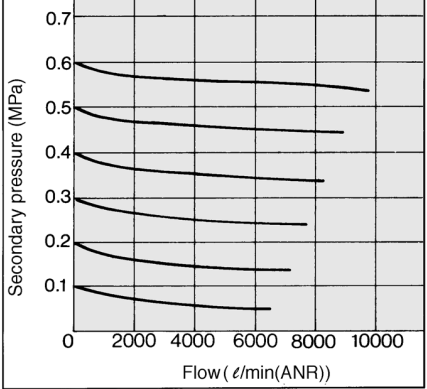
AR435 Rc(PT)1/2



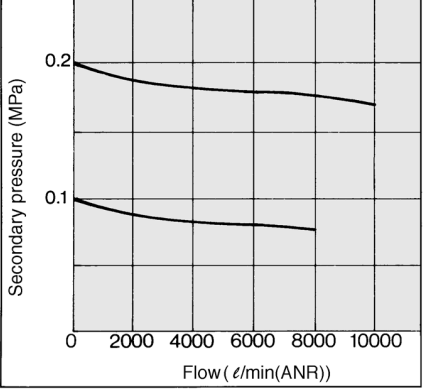
AR425/435 Rc(PT)1/2



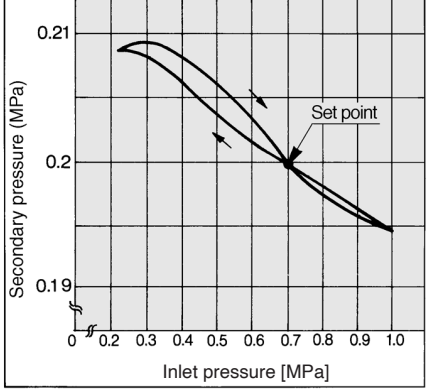
AR625 Rc(PT)1



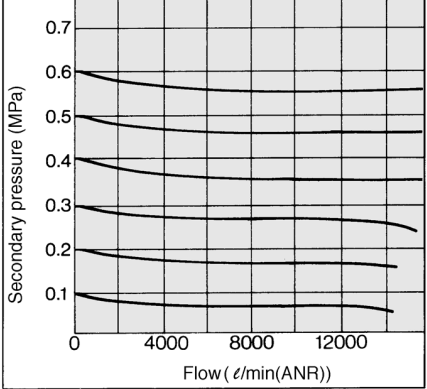
AR635 Rc(PT)1



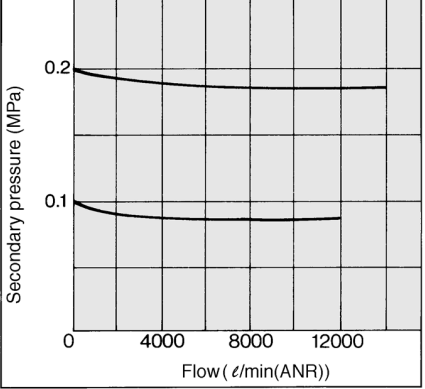
AR625/635 Rc(PT)1



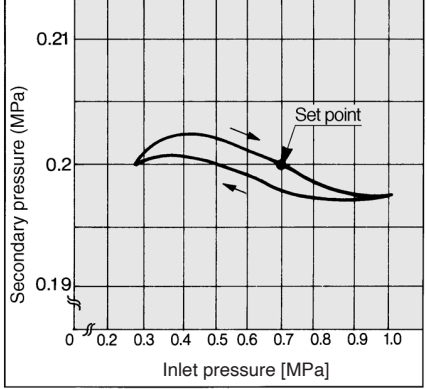
AR825 Rc(PT)1 1/2



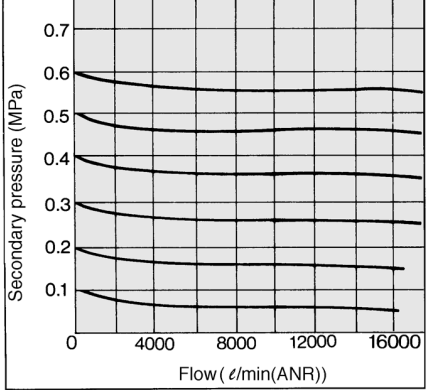
AR835 Rc(PT)1 1/2



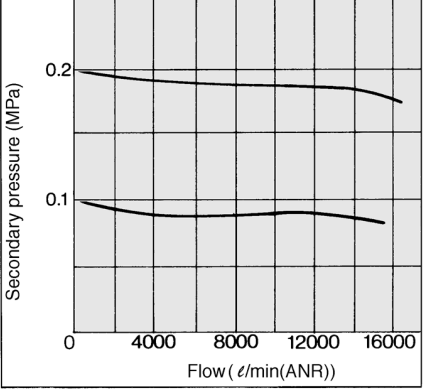
AR825/835 Rc(PT)1 1/2



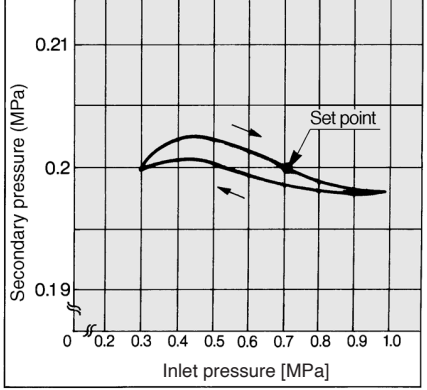
AR925 Rc(PT)2



AR935 Rc(PT)2



AR925/935 Rc(PT)2

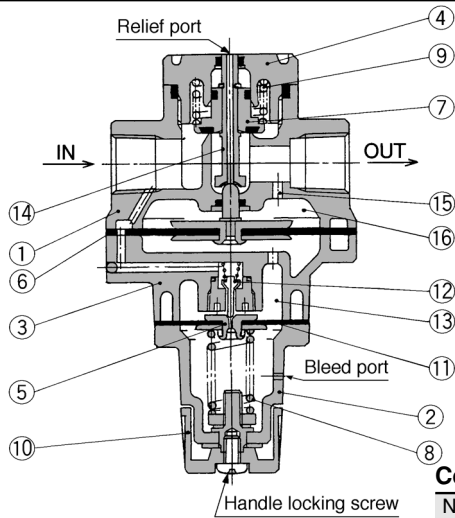


Pressure Characteristics

Supply pressure: 0.7MPa
Secondary pressure: 0.2MPa
Flow: 20 ℓ/min (ANR)

Pilot Operated Regulator **AR425 to 935**

Construction



When handle ⑩ is turned clockwise to compress pressure adjustment spring ⑧, the pressure from the IN side passes through diaphragm ⑪, opens pilot valve ⑫, and enters upper pilot chamber ⑬. This pressure and the force generated by pressure adjustment spring ⑧ act as resistance, resulting in equilibrium. Then, this pressure passes through diaphragm ⑥ of the main valve and stem ⑭, and pushes valve (main valve) ⑦ open, thus guiding the pressure to the OUT side. At the same time, the pressure passes through feedback hole ⑮, and enters diaphragm chamber ⑯, thus establishing the OUT side pressure (secondary pressure).

Component Parts

No.	Description	Material	Note
①	Body	ADC*	Painted silver
②	Bonnet	ADC	Painted silver
③	Chamber	ADC	Painted silver
④	Valve guide	ZDC*	Painted silver

*In case of AR825/835/925/935, the material is AC2A-F.

⚠ Precautions

Be sure to read before handling. Refer to p.0-26 and 0-27 for Safety Instructions and common precautions on the products mentioned in this catalogue, and refer to p.1.0-2 and 1.0-13 for precautions on every series.

Mounting/Adjustment

⚠ Warning

- ① Set up the regulator while verifying the pressure that is indicated on the primary and the secondary pressure gauges. Turning the handle excessively could damage the internal parts.
- ② The pressure gauge that is provided with AR*35 for setting a pressure between 0.02 to 0.2MPa is the 0.2MPa style. To prevent damage to the pressure gauge, make sure that a pressure that exceeds 0.2MPa is not applied.
- ③ Install the valve guide (on the opposite side of the handle) 60mm away from the ground surface to facilitate maintenance inspection.
- ④ Do not use the regulator with flow exceeding the Max. flow indicated in "Flow Characteristics" as this can cause failure in pressure adjustment.

⚠ Caution

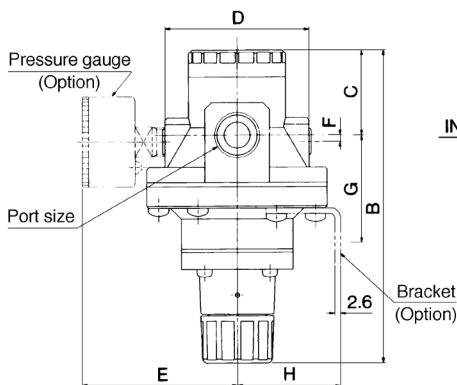
- ① Release the lock to adjust the pressure. After the adjustment, engage the lock. Failure to observe this procedure could damage the handle or cause the secondary pressure to fluctuate.
(Lock operating method)
Loosen the handle locking screw to release the lock, and tighten it to lock it.
- ② To use this product between the solenoid valve and the actuator, contact SMC.

Replacement Parts

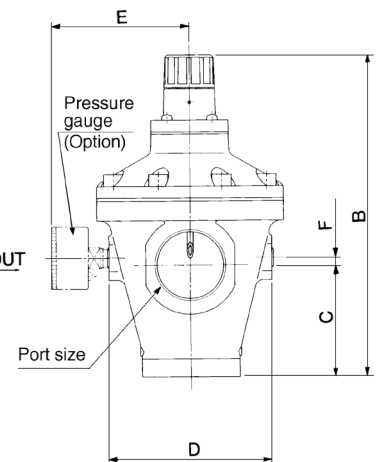
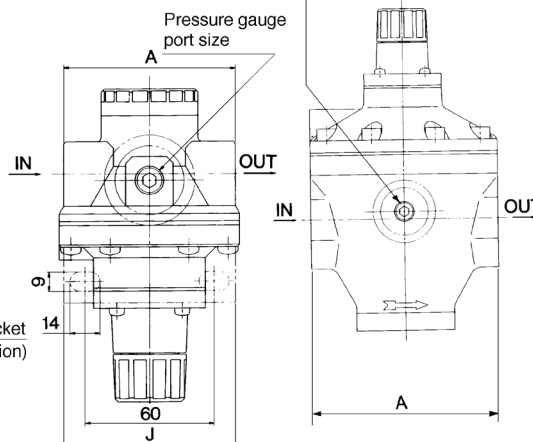
No.	Description	Material	Part No.			
			AR425/435	AR625/635	AR825/835	AR925/935
⑤	Exhaust valve ass'y	—	132586A	132586A	132586A	132586A
⑥	Main valve side diaphragm ass'y	—	132581A	132659A	13275A	13285A
⑦	Valve ass'y	—	132572A	132653A	132752A	132829A
⑧	Adjusting spring	SWPB	135053(AR425) 135025(AR435)	135053(AR625) 135025(AR635)	135053(AR825) 135025(AR835)	135053(AR925) 135025(AR935)
⑨	Valve spring	SUS304	135211	132656	132713	13289

Dimensions

AR425/435 AR625/635



AR825/835 AR925/935



Model	Port size	Pressure gauge port size	A	B	C	D	E	F	Bracket dimensions			Bracket part No.
									G	H	J	
AR425/435	1/4, 3/8, 1/2	1/4	80	145.5	39.5	67	73	3	46.5	48	80	B24P
AR625/635	3/4, 1	1/4	98	155	43	78	78.5	7	85	52	90	B25P
AR825/835	1 1/4, 1 1/2	1/4	126	216	75	110	94.5	5	—	—	—	—
AR925/935	2	1/4	160	241	90	140	109.5	10	—	—	—	—