

Pilot Operated Regulator

Series 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 | | 1 1/4, 1 1/2 | | 2 | |
| Fluid | Air | | | | | | | |
| Proof pressure | 1.5 MPa | | | | | | | |
| Max. operating pressure | 1.0 MPa | | | | | | | |
| 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 (for bleed hole) ⁽²⁾ | 5 l/min (ANR) (at maximum pressure) | | | | | | | |
| Pressure gauge port size | 1/4 | | | | | | | |
| Ambient and fluid temperature | -5 to 60°C (No freezing) | | | | | | | |
| Construction | Internal pilot relieving type (Pilot air is always bleeding.) | | | | | | | |
| Mass (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. Due to the construction, the pressure gap between inlet and outlet cannot be set within 0.03 MPa, even if the handle is set at the maximum.

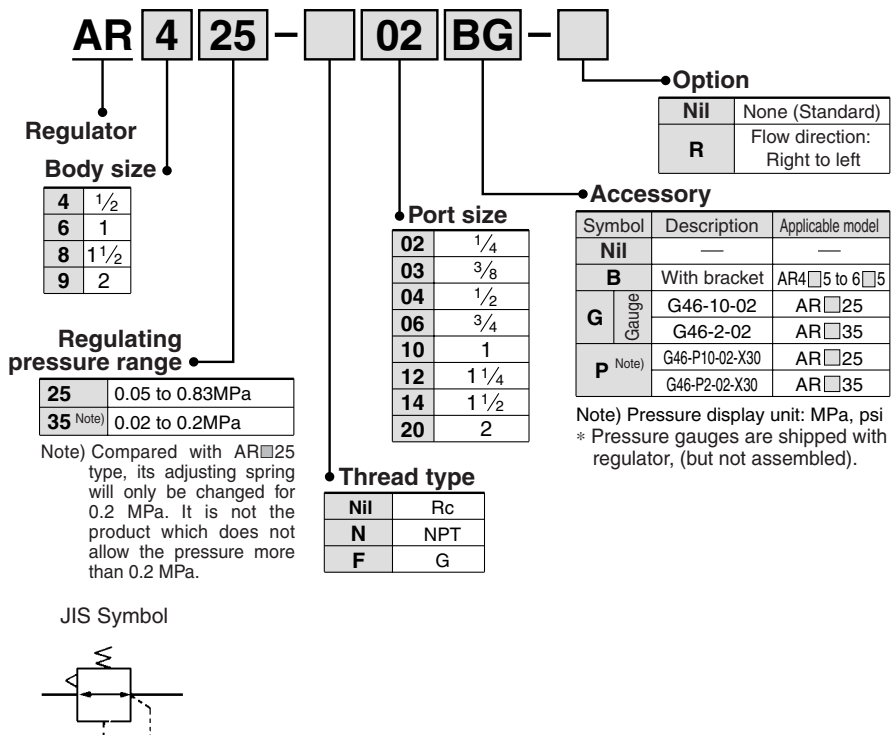
Accessory (Option)/Part No.

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

- Note 1) • In the gauge part no. (e.g. G46-10-□02), □ indicate kind of the connecting thread. Put nothing for Rc and "N" for NPT thread.
 • Please consult with SMC for NPT pressure gauge.
 Note 2) Use caution not to tighten excessively when mounting a pressure gauge, otherwise it may result in a breakdown. Use a pipe tape for sealing. Recommended torque: 12 to 14 N·m.

How to Order

Internal pilot operated relieving type regulator



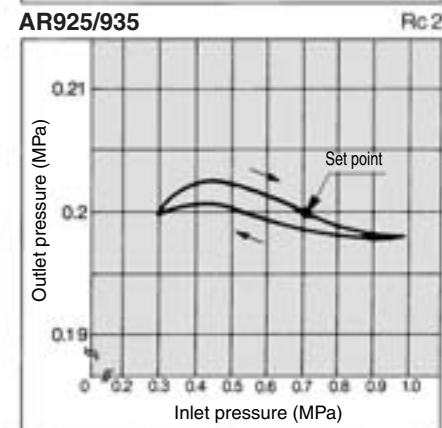
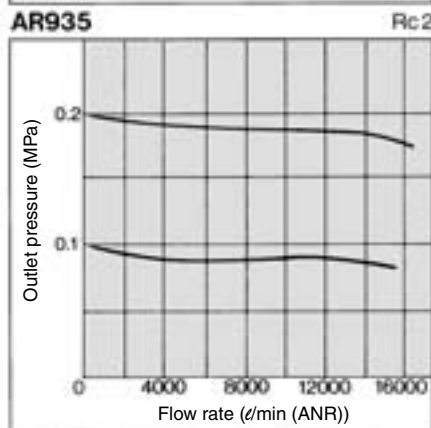
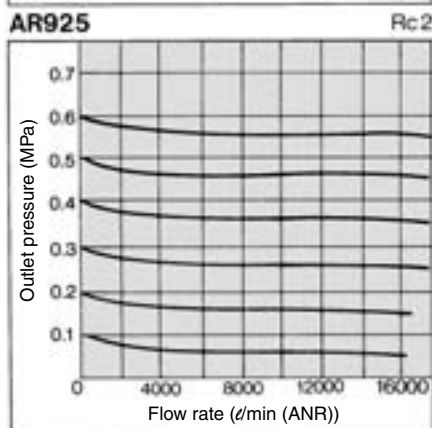
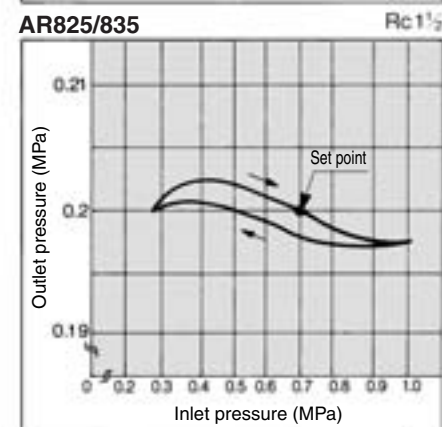
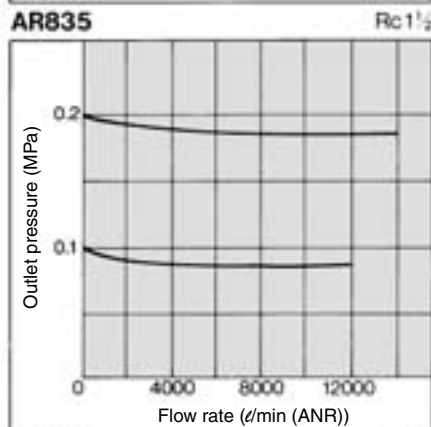
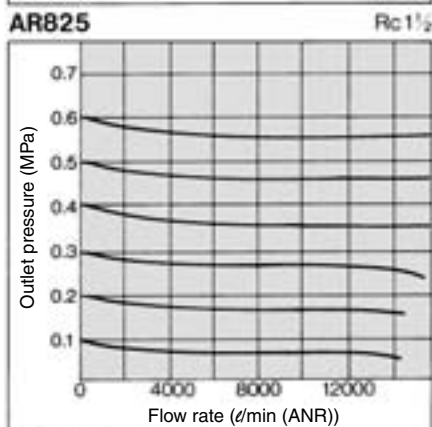
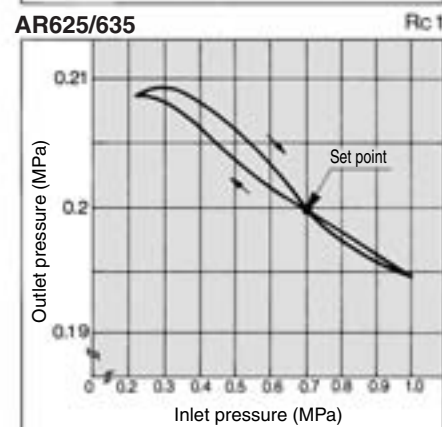
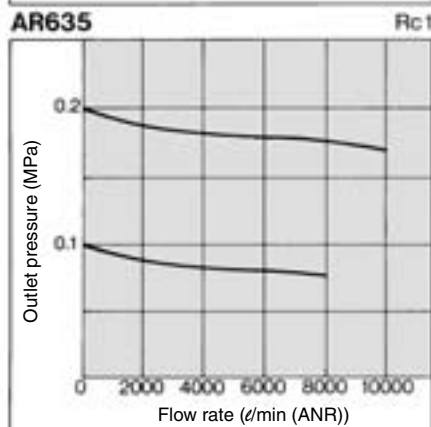
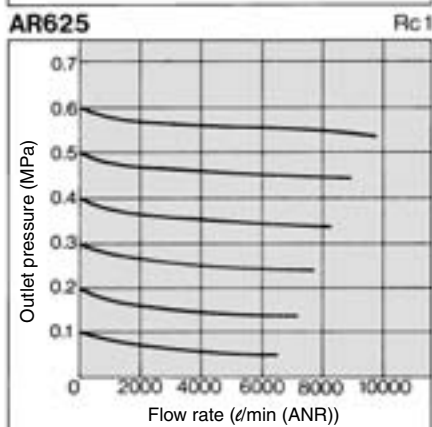
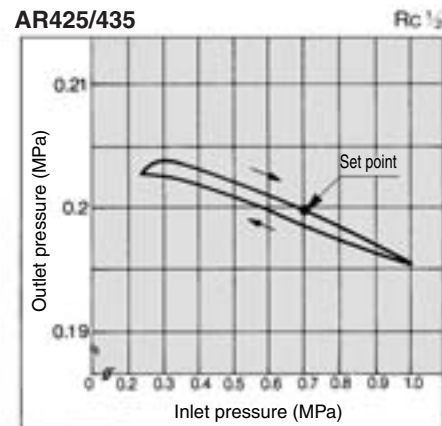
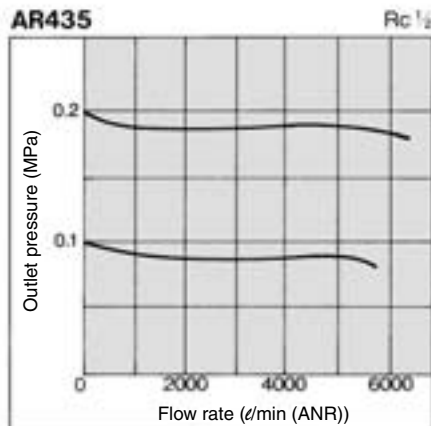
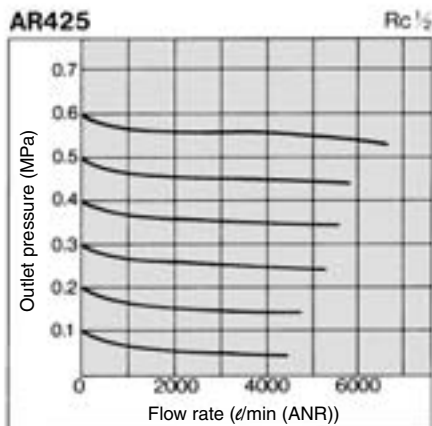
Pilot Operated Regulator *Series AR425 to 935*

Flow Characteristics (Representative values)

Inlet pressure: 0.7 MPa

Pressure Characteristics (Representative values)

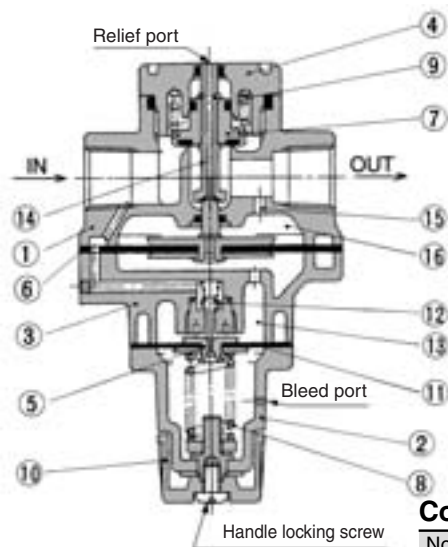
Conditions:
Inlet pressure 0.7 MPa
Outlet pressure 0.2 MPa
Flow rate: 20 ℓ /min (ANR)



- ARJ
- AR425 to 935
- AMR
- ARM
- ARP
- IR
- IRV
- VEX1
- SRH
- SRP
- SRF
- ARX20
- VCHR
- ITV
- IC
- PVQ
- VEF
- VEP
- VER
- VEA
- VY2
- VBA
- VBAT
- AP100

Series 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 (outlet pressure).

Component Parts

| No. | Description | Material | Note |
|-----|--------------------|-----------------------|-------------------------|
| 1 | Body | Aluminum die-casted * | Platinum silver painted |
| 2 | Bonnet | Aluminum die-casted | Platinum silver painted |
| 3 | Chamber | Aluminum die-casted | Platinum silver painted |
| 4 | Valve guide | Zinc die-casted * | Platinum silver painted |

* In the case of AR825/835/925/935, the material is aluminum alloy.

Replacement Parts

| No. | Description | Material | Qty. | Part no. | | | |
|-------|--|-----------------|------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| | | | | AR425, 435 | AR625, 635 | AR825, 835 | AR925, 935 |
| 5, 11 | Exhaust valve assembly <small>(Note)</small> | — | 1 | 132586A | 132586A | 132586A | 132586A |
| 6 | Main valve side diaphragm assembly | — | 1 | 132581A | 132659A | 13275A | 13285A |
| 7 | Valve assembly | — | 1 | 132572A | 132653A | 132752A | 132829A |
| 8 | Adjusting spring | Steel wire | 1 | 135053 (AR425) 135025 (AR435) | 135053 (AR625) 135025 (AR635) | 135053 (AR825) 135025 (AR835) | 135053 (AR925) 135025 (AR935) |
| 9 | Valve spring | Stainless steel | 1 | 135211 | 132656 | 132713 | 13289 |
| 10 | Handle | ABS | 1 | 13414 | | | |

Note) Diaphragm is included.

⚠ Precautions

Be sure to read before handling. Refer to front matters 42 and 43 for Safety Instructions and pages 287 to 291 for Precautions on every series.

Mounting/Adjustment

⚠ Warning

1. Install the valve guide (on the opposite side of the handle) 60 mm away from the ground surface to facilitate maintenance inspection.
2. Do not use the regulator with flow exceeding the Max. flow indicated in "Flow Characteristics" as this can cause failure in pressure adjustment.

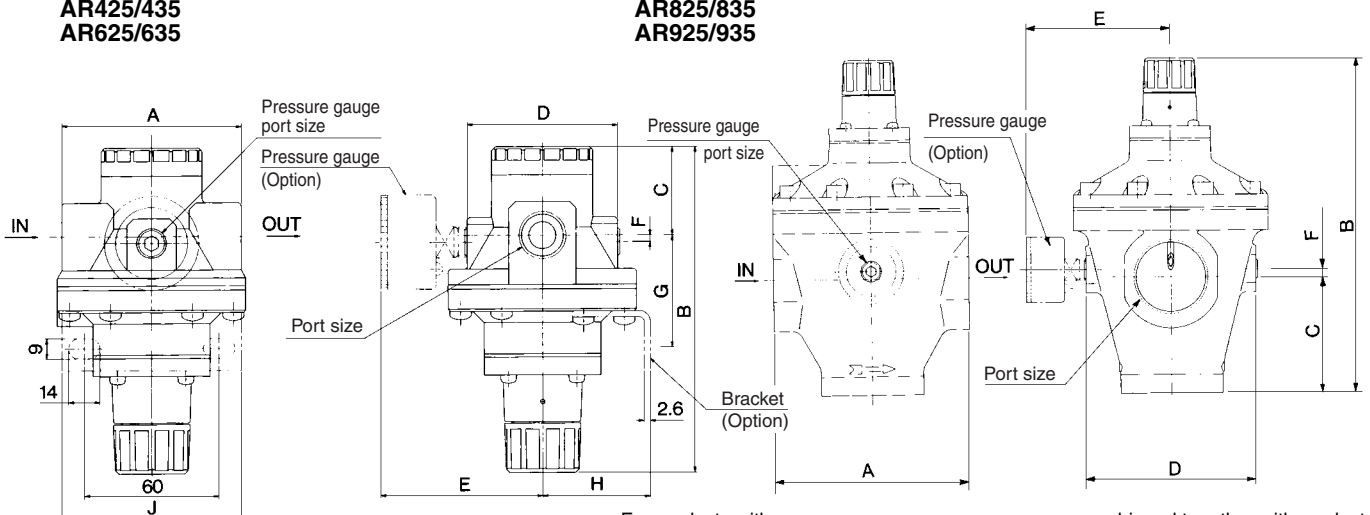
⚠ Caution

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 outlet pressure to fluctuate.
<Lock operating method>
Loosen the handle locking screw to unlock it, and tighten it to lock it.
2. Please contact SMC if this product is to be used between solenoid valve and actuator.

Dimensions

AR425/435
AR625/635

AR825/835
AR925/935



* For products with pressure gauge, pressure gauges are shipped together with product.

| 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 | — | — | — | — |