

# Direct Operated Regulator for 6.0 MPa (Relieving Type)

## Series *VCHR*

Service life: 10 million cycles

Using **NSF-H1-certified grease** on the guide ring (sliding) part.

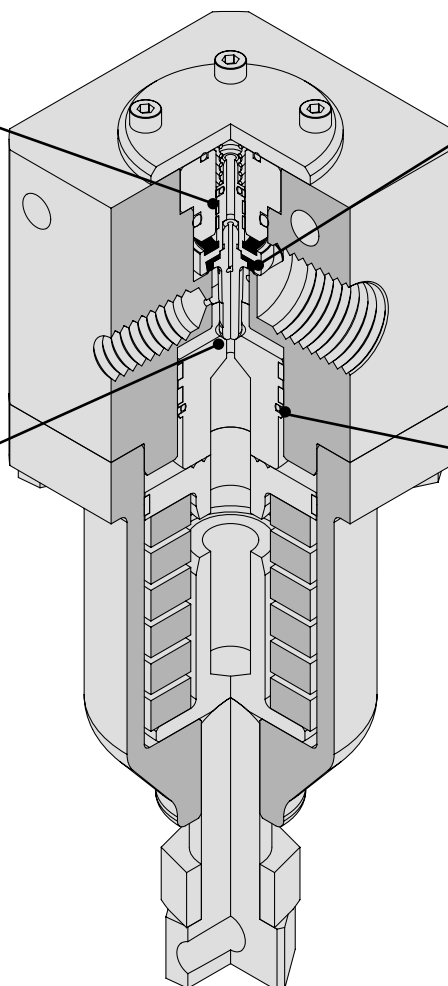
Improved durability under a high pressure environment with a **polyurethane elastomer** poppet

Adopting a **metal-sealed relief valve** to improve durability.

**Special fluoro-resin sealant** is adopted for the sliding part.



Stable responsiveness after extended disuse.  
No likely to subject to a pressure.



**Made to Order**  
(Refer to page 635 for details.)

### How to Order

**VCHR 30-06 G**

Body size

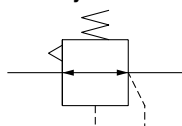
|    |
|----|
| 30 |
| 40 |

Thread type  
(Conforming to ISO1179-1 on the pneumatic/hydraulic G thread)

Port size

| Symbol | Port size | VCHR30 | VCHR40 |
|--------|-----------|--------|--------|
| 06     | 3/4       | ●      |        |
| 10     | 1         | ●      | ●      |
| 14     | 1-1/2     |        | ●      |

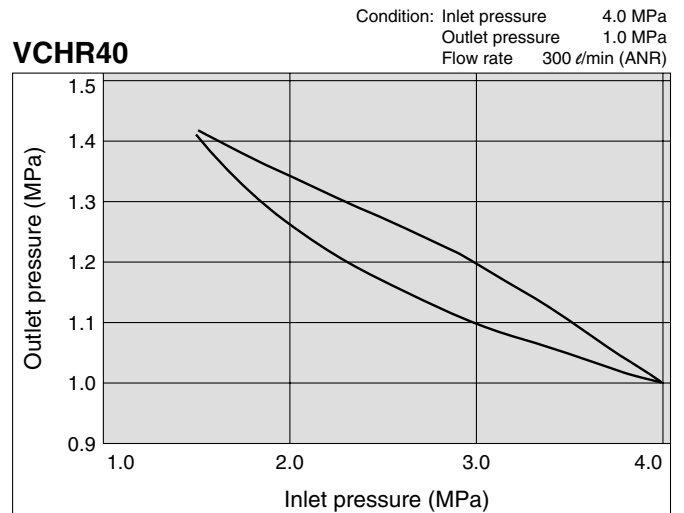
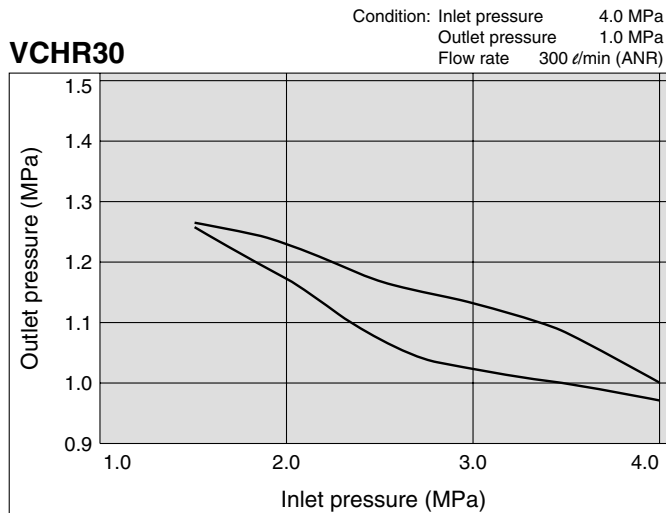
Symbol



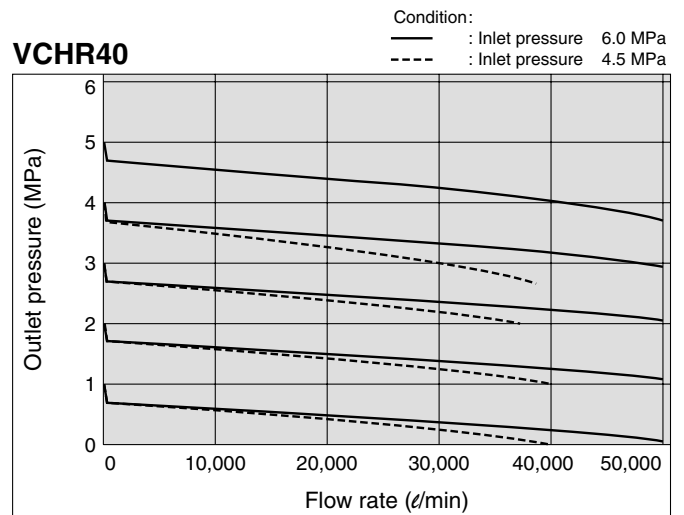
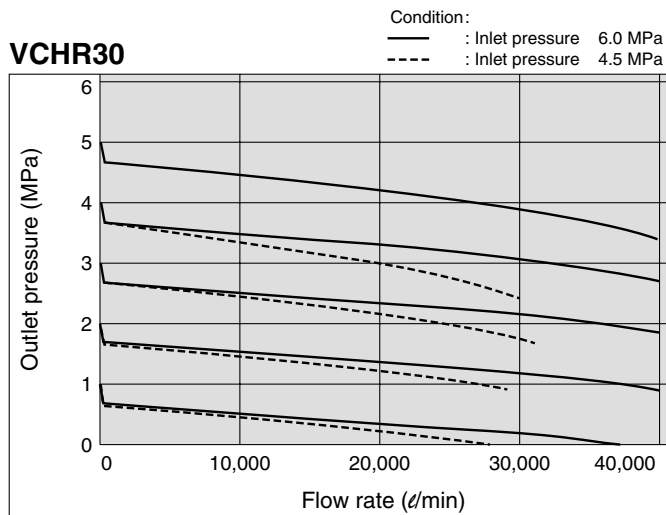
## Specifications

| Model                   | VCHR30                                                      | VCHR40     |
|-------------------------|-------------------------------------------------------------|------------|
| Valve construction      | Piston type                                                 |            |
| Valve material          | Polyurethane elastomer                                      |            |
| Relief mechanism        | Relieving type                                              |            |
| Port size               | G3/4, G1                                                    | G1, G1•1/2 |
| Thread type             | Conforming to ISO1179-1 on the pneumatic/hydraulic G thread |            |
| Fluid                   | Air                                                         |            |
| Max. operating pressure | 6.0 MPa                                                     |            |
| Set pressure range      | 0.5 to 5.0 MPa                                              |            |
| Fluid temperature       | -5 to 60°C                                                  |            |
| Ambient temperature     | -5 to 60°C                                                  |            |
| Mass                    | 4.4 kg                                                      | 6.2 kg     |

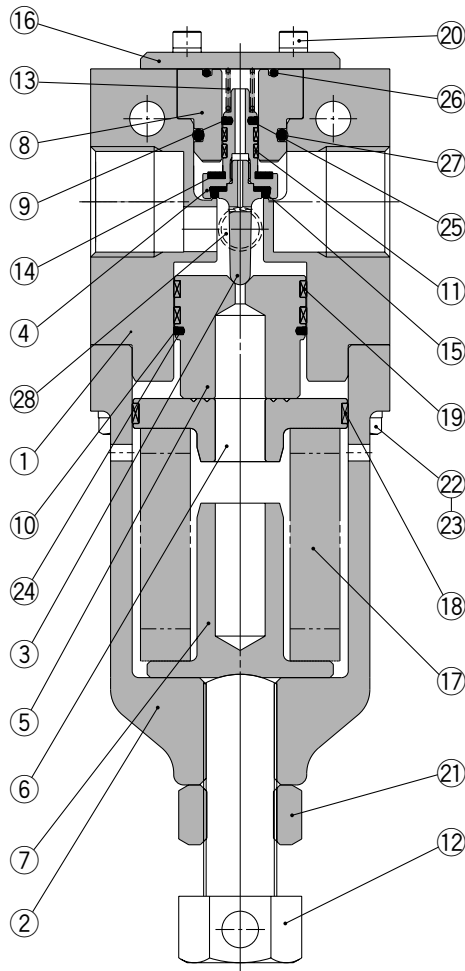
## Pressure Characteristics



## Flow Characteristics



## Construction

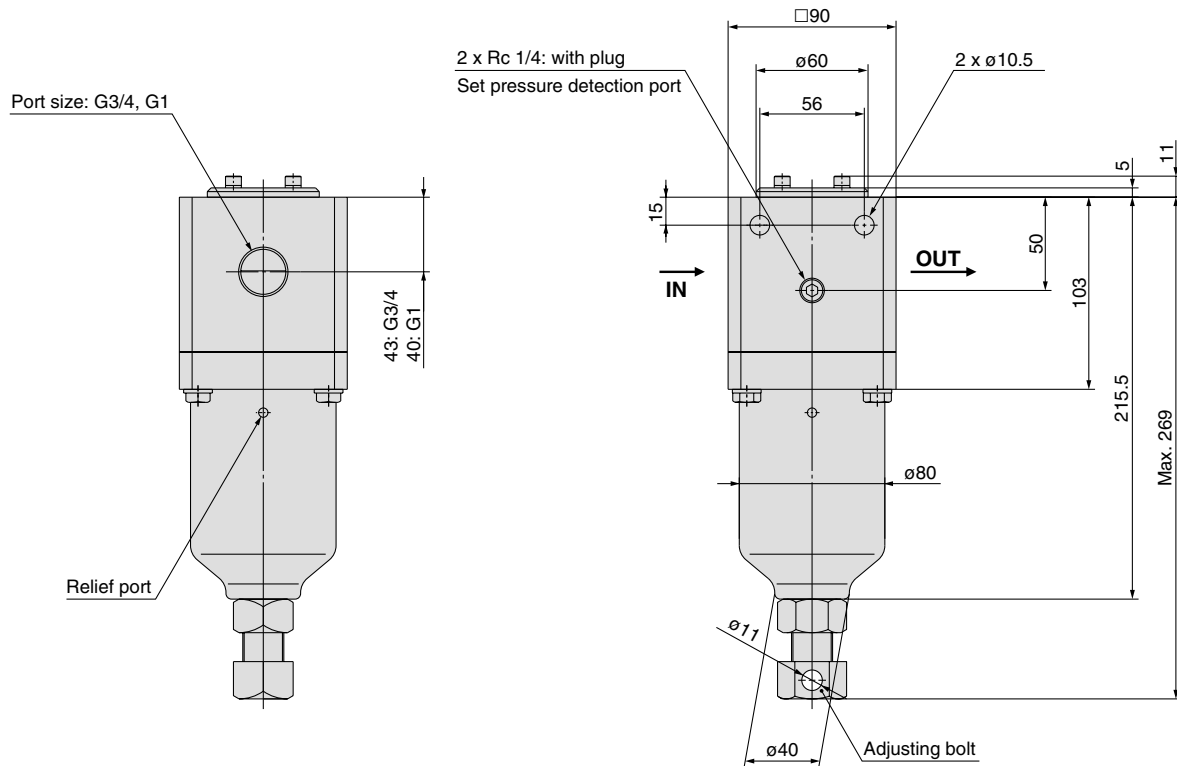


## Component Parts

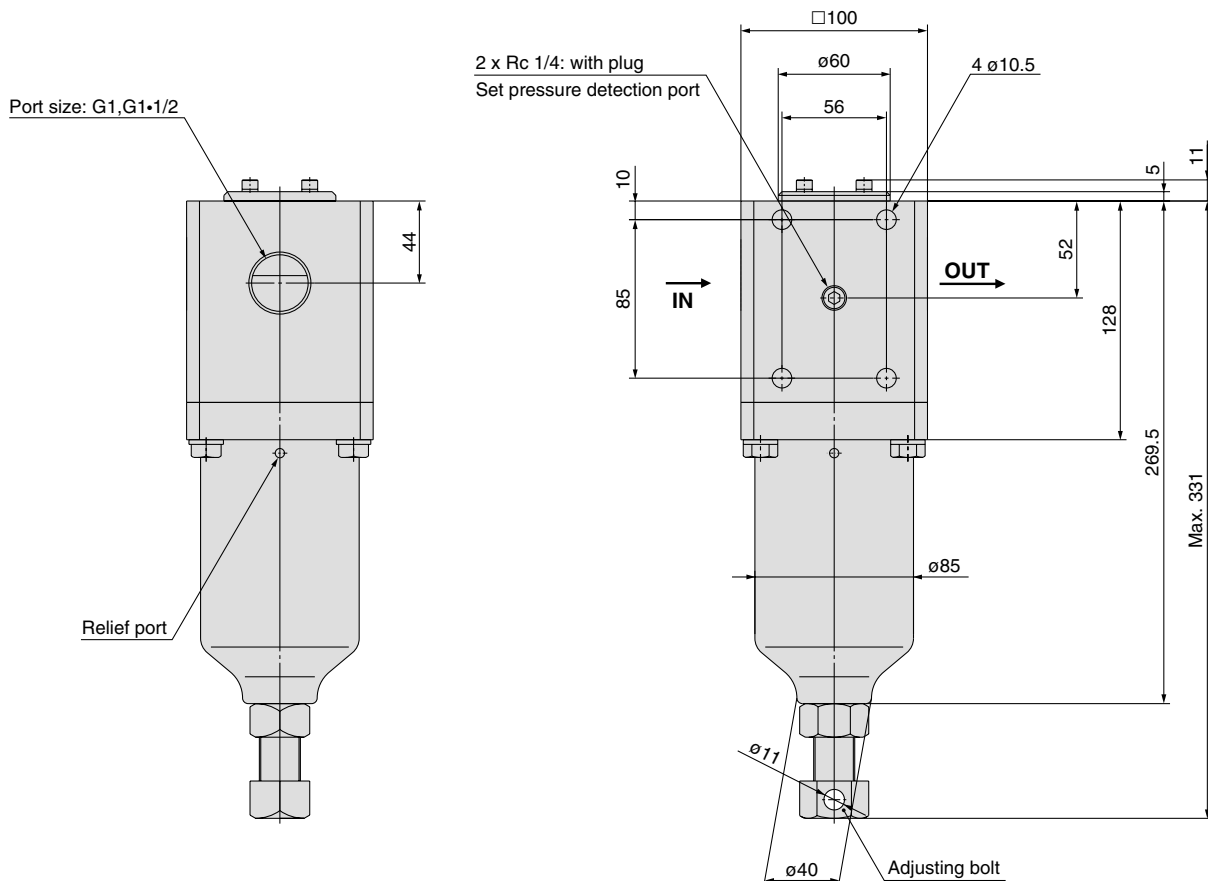
| No. | Description                   | Material                          |
|-----|-------------------------------|-----------------------------------|
| 1   | Body                          | Aluminum + Hard anodized          |
| 2   | Bonnet                        | Aluminum + Hard anodized          |
| 3   | Valve                         | Stainless steel                   |
| 4   | Valve spool                   | Stainless steel                   |
| 5   | Piston                        | Steel + Electroless nickel plated |
| 6   | Spring guide                  | Steel + Electroless nickel plated |
| 7   | Spring seat                   | Steel + Electroless nickel plated |
| 8   | Spool guide                   | Aluminum + Hard anodized          |
| 9   | Seal A                        | Resin                             |
| 10  | Seal B                        | Resin                             |
| 11  | Guide ring                    | Resin                             |
| 12  | Adjusting bolt                | Stainless steel                   |
| 13  | Return spring                 | Stainless steel                   |
| 14  | Cushion                       | Polyurethane elastomer            |
| 15  | Poppet                        | Polyurethane elastomer            |
| 16  | Plate                         | Steel + Electroless nickel plated |
| 17  | Spring                        | Stainless steel                   |
| 18  | Guide ring                    | Resin                             |
| 19  | Guide ring                    | Resin                             |
| 20  | Hexagon socket head cap screw | Carbon steel                      |
| 21  | Hexagon nut                   | Carbon steel                      |
| 22  | Hexagon bolt                  | Carbon steel                      |
| 23  | Spring washer                 | Carbon steel                      |
| 24  | O-ring                        | NBR                               |
| 25  | O-ring                        | NBR                               |
| 26  | O-ring                        | NBR                               |
| 27  | O-ring                        | NBR                               |
| 28  | Hexagon socket head plug      | Carbon steel                      |

## Dimensions

### VCHR30



### VCHR40





## Series VCHR

# Specific Product Precautions

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

### Adjustment

#### Caution

1. When adjusting the outlet side pressure, moment is applied on the adjusting bolt. Support it separately so that moment is not applied to the external pipings.

##### Reference for Handle Moment

Unit: N·m

| Set pressure | 1 MPa | 2 MPa | 3 MPa | 4 MPa | 5 MPa |
|--------------|-------|-------|-------|-------|-------|
| Torque       | 3     | 6     | 9     | 12    | 15    |

2. When adjusting the outlet side pressure, the adjusting bolt (32 mm width across flats) can be fixed with a wrench. A screwdriver of approximately 20 to 30 cm can also be used for easy adjustments, using the (ø11) hole on the width across flats.

### Piping

#### Warning

1. When tightening a screw on the piping material, use the recommended torque, holding the female side.

Insufficient torque will cause looseness or inferior sealing. However, overtightening will cause damage to the thread. Also, tightening without holding the female side will put excessive direct stress on brackets, etc., resulting in damage, etc.

##### Recommended Tightening Torque

Unit: N·m

| Connecting thread | 3/4      | 1        | 1-1/2    |
|-------------------|----------|----------|----------|
| Torque            | 28 to 30 | 36 to 38 | 48 to 50 |

### Disassembly

#### Caution

1. This product cannot be disassembled since it is made of precision components with a specific tolerance.

# Series VCHR Made to Order Specifications:

Contact SMC for detailed dimensions, specifications and delivery.



## 6.0 MPa piloted regulator (Air operated type)

**VCHRA**

Remote control is possible with electro-pneumatic regulator ITV.

**VCHRA 30 - 06 G**

Body size

|    |
|----|
| 30 |
| 40 |

Thread type

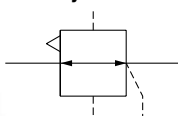
(ISO1179-1 compliant G thread for hydraulic and pneumatic equipment)

Port size

| Symbol | Port size | VCHRA30 | VCHRA40 |
|--------|-----------|---------|---------|
| 06     | 3/4       | ●       |         |
| 10     | 1         | ●       | ●       |
| 14     | 1-1/2     |         | ●       |



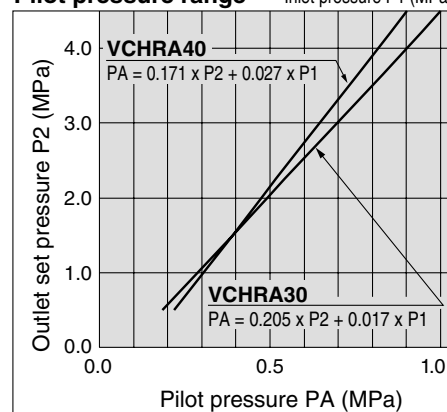
Symbol



### Specifications

| Model                        | VCHRA30                                                     | VCHRA40    |
|------------------------------|-------------------------------------------------------------|------------|
| Valve construction           | Piston type                                                 |            |
| Valve material               | Polyurethane elastomer                                      |            |
| Relief mechanism             | Relieving type                                              |            |
| Port size                    | G3/4, G1                                                    | G1, G1-1/2 |
| Port size<br>Thread standard | Conforming to ISO1179-1 on the pneumatic/hydraulic G thread |            |
| Fluid                        | Air                                                         |            |
| Max. operating pressure      | 6.0 MPa                                                     |            |
| Pilot pressure range         | Refer to the graph.                                         |            |
| Set pressure range           | 0.5 to 4.5 MPa                                              |            |
| Fluid temperature            | -5 to 60°C                                                  |            |
| Ambient temperature          | -5 to 60°C                                                  |            |
| Mass                         | 2.9 kg                                                      | 4.1 kg     |

### Pilot pressure range



Note) Outlet pressure may fluctuate under certain conditions.

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

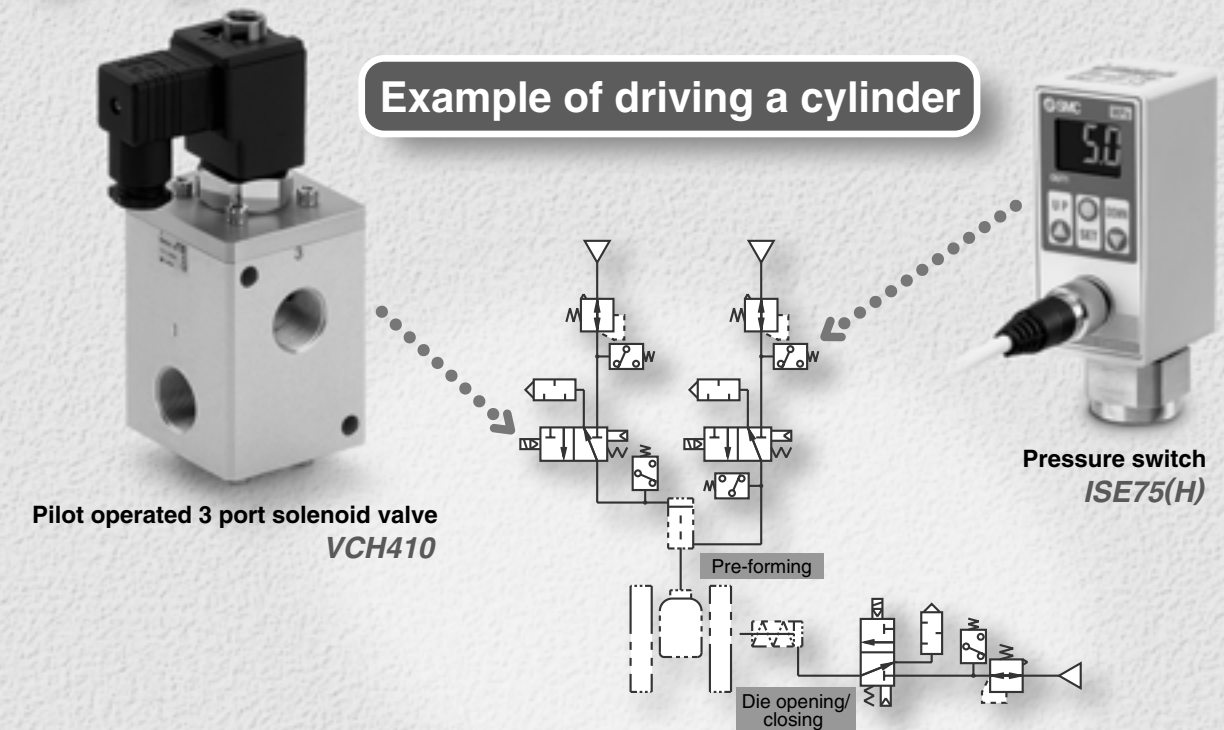
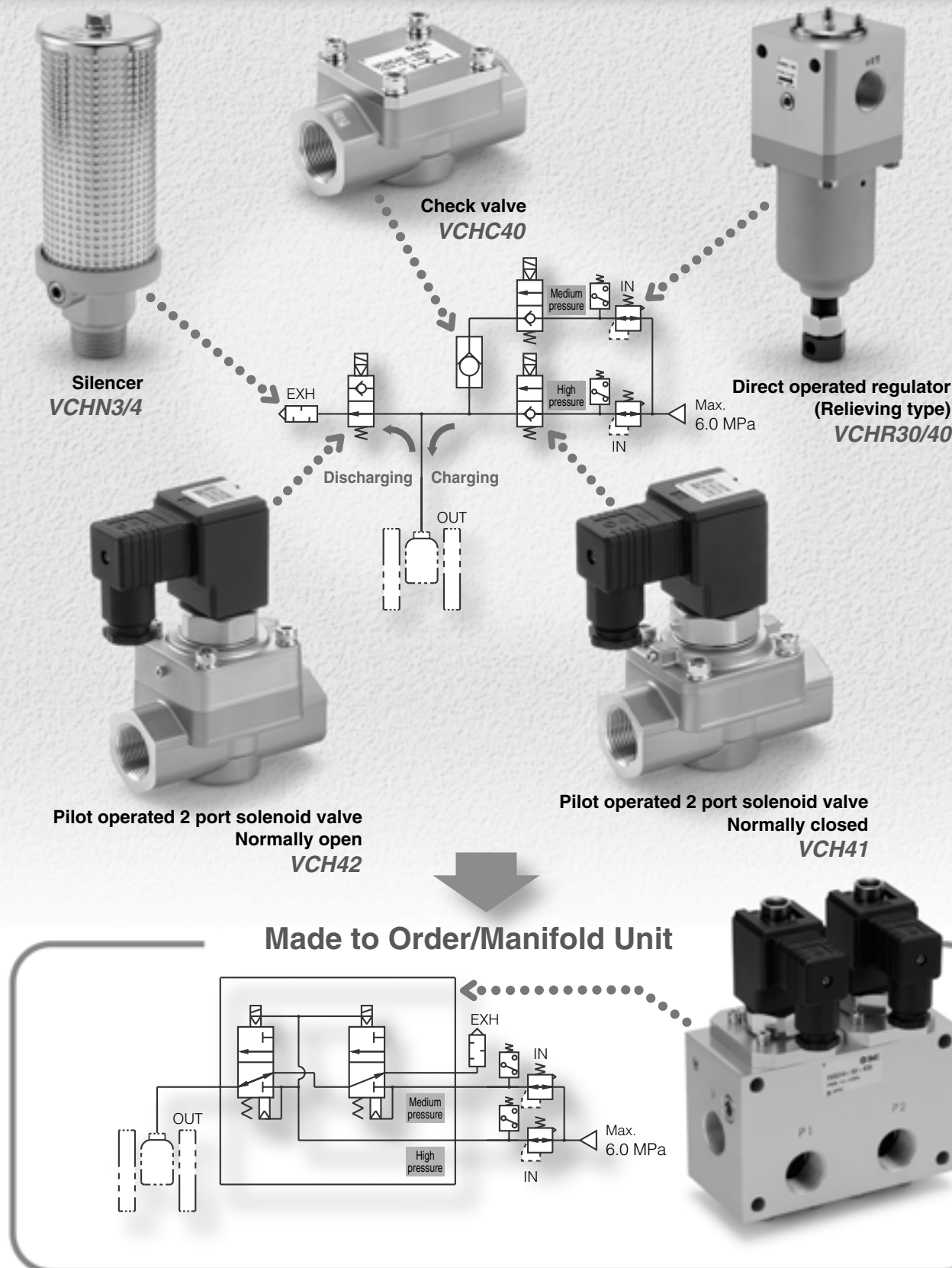
AP100

# 5.0 MPa

## Pneumatic

## Equipment Variation

Applications included air-blowing, charging fluid into a vessel, or discharging (Blow-molding equipment, etc.)



|  | Description                                | Features                                                                                                                                                   | Maximum operating pressure (MPa)                | Series      | Port size |     |     |   |       |       | Page                  |
|--|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------|-----------|-----|-----|---|-------|-------|-----------------------|
|  |                                            |                                                                                                                                                            |                                                 |             | 1/4       | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 |                       |
|  | Pilot operated 2 port solenoid valve       | <b>Service life: 10 million cycles</b><br>Adopting a polyurethane elastomer poppet in a valve seat. Improved durability under a high pressure environment. | 5.0                                             | VCH41(N.C.) |           |     | ●   | ● |       |       | Best Pneumatics No. 7 |
|  | Check valve                                |                                                                                                                                                            | 5.0                                             | VCHC40      |           |     | ●   | ● |       |       |                       |
|  | Pilot operated 3 port solenoid valve       |                                                                                                                                                            | 5.0                                             | VCH410      |           | ●   | ●   | ● |       |       | Best Pneumatics No. 7 |
|  | Direct operated regulator (Relieving type) |                                                                                                                                                            | Inlet pressure 6.0<br>Set pressure 0.5 to 5.0   | VCHR30      |           |     | ●   | ● |       |       | P.630                 |
|  | Silencer                                   |                                                                                                                                                            | 5.0<br>(Relief valve release pressure: 1.8 MPa) | VCHN3       |           |     | ●   | ● |       |       |                       |
|  |                                            |                                                                                                                                                            |                                                 | VCHN4       |           |     |     | ● | ●     | ●     | Best Pneumatics No. 6 |

### Related Equipment

|  |                 |                                                          |              |          |   |  |  |  |  |  |                       |
|--|-----------------|----------------------------------------------------------|--------------|----------|---|--|--|--|--|--|-----------------------|
|  | Pressure switch | <b>2-color display Metal body</b><br>(Aluminum die-cast) | 10.0<br>15.0 | ISE75(H) | ● |  |  |  |  |  | Best Pneumatics No. 6 |
|--|-----------------|----------------------------------------------------------|--------------|----------|---|--|--|--|--|--|-----------------------|

### Made to Order

- 6.0 MPa pilot operated regulator (Air operated type) ..... P.635
- 22.0 MPa 2 port air operated valve ..... Best Pneumatics No. 7