Air Tank for Booster Regulator
Compliant with ASME Standards

- Compliant with ASME standards
  ASME Section VIII-Division 1
  Miniature pressure vessels: UM stamp

- Series Variations

<table>
<thead>
<tr>
<th>Material</th>
<th>5 L</th>
<th>10 L</th>
<th>22 L</th>
<th>38 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon steel</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Stainless steel</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- ASME standards compliant safety valve included
  (UV stamp)

- Manufacturer’s certificate of compliance included
  (FORM U-3A)

Compact connections are possible with booster regulators.

Overseas Standards Compliant Product Variations

<table>
<thead>
<tr>
<th>Main country/region</th>
<th>Law</th>
<th>Part no.</th>
<th>Material</th>
<th>Tank capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>CE Marking/Simple Pressure Vessels Directive</td>
<td>VBAT-□-Q</td>
<td>Carbon steel</td>
<td>5 L/10 L/20 L/38 L</td>
</tr>
<tr>
<td>China</td>
<td>Regulations on Safety Supervision of Special Equipment/</td>
<td>VBAT□-X104</td>
<td>Carbon steel/Stainless steel</td>
<td>5 L/10 L/20 L/38 L</td>
</tr>
<tr>
<td>South Korea</td>
<td>Occupational Safety and Health Act/KC Certification</td>
<td>VBAT□-X101</td>
<td>Carbon steel/Stainless steel</td>
<td>5 L/10 L/20 L/38 L</td>
</tr>
</tbody>
</table>

* Refer to the Web Catalog for details about models, specifications, etc.
*1 The capacity of the VBAT□-X104 carbon steel tank is 22 L.
*2 The VBAT□-X101 is not within the coverage of the High Pressure Gas Safety Control Act in South Korea as the maximum operating pressure is 0.97 MPa.

There are many overseas countries, including but not limited to the U.S., which have adopted the ASME standards as their design safety standards. These products can be used in the following countries by submitting a notification of use (application) in each country.

[Central and South America] Argentina, Bolivia, Chile, Venezuela, Brazil, Mexico
[Asia/Oceania] Malaysia, Singapore, Pakistan, Taiwan, Hong Kong, India, Philippines, New Zealand

ASME standards compliant safety valve included (UV stamp)
How to Order

**VBAT**05 A N 1-E V-X105

**Tank capacity**
- Symbol: Internal capacity
  - 05: 5 L
  - 10: 10 L
  - 20: 22 L
  - 38: 38 L

**Material**
- Symbol: Material
  - A: Carbon steel (SA-414)
  - S: Stainless steel (SA-240 316)

**Thread type**
- Symbol: Thread type
  - Nil
  - Rc
  - N
  - NPT

**Option**
- Symbol: Option
  - Nil
  - V: Drain valve

**Safety valve/Set pressure: 2 MPa (Accessory)**
- E: Safety valve is included.

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VBAT05A-1</td>
<td>Compressed air</td>
<td>5</td>
<td>2.0</td>
<td>3/8</td>
<td>1/2</td>
<td>0 to 75</td>
<td>4.5/3.2</td>
<td>Carbon steel</td>
<td>Outside: Silver gray, Inside: Phosphate coated treatment</td>
<td>VBAT-E1</td>
<td>VBAT5A-Y-3N</td>
<td></td>
</tr>
<tr>
<td>VBAT05S-1</td>
<td>Compressed air</td>
<td>10</td>
<td>2.0</td>
<td>1/2</td>
<td>1/2</td>
<td>0 to 75</td>
<td>9.1/8.2</td>
<td>Stainless steel</td>
<td>Outside: Acid cleaning</td>
<td>VBAT-E1</td>
<td>VBAT5S-Y-4N</td>
<td></td>
</tr>
<tr>
<td>VBAT10A-1</td>
<td>Compressed air</td>
<td>22</td>
<td>2.0</td>
<td>1/2</td>
<td>3/4</td>
<td>0 to 75</td>
<td>15.0/13.2</td>
<td>Carbon steel</td>
<td>Outside: Silver gray, Inside: Phosphate coated treatment</td>
<td>VBAT-E1</td>
<td>VBAT10A-Y-3N</td>
<td></td>
</tr>
<tr>
<td>VBAT10S-1</td>
<td>Compressed air</td>
<td>38</td>
<td>2.0</td>
<td>1/2</td>
<td>3/4</td>
<td>0 to 75</td>
<td>20.9/20.4</td>
<td>Stainless steel</td>
<td>Outside: Acid cleaning</td>
<td>VBAT-E1</td>
<td>VBAT10S-Y-4N</td>
<td></td>
</tr>
</tbody>
</table>

- **ASME Standards Compliant Product**
  - The labels indicating compliance with ASME standards are not based on the International System of Units. Additionally, these products will be sold by SMC Corporation of America. Please contact SMC for ordering procedures and lead times.

- **Options/Accessory Numbers**

**VBAT-A-1 (Carbon steel)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread type</th>
<th>Accessory kit</th>
<th>Safety valve</th>
<th>Drain valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBAT05A1</td>
<td>NPT</td>
<td>VBAT5A-Y-3N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
<tr>
<td>VBAT10A1</td>
<td>NPT</td>
<td>VBAT10A-Y-3N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
<tr>
<td>VBAT20A1</td>
<td>NPT</td>
<td>VBAT20A-Y-3N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
<tr>
<td>VBAT38A1</td>
<td>NPT</td>
<td>VBAT38A-Y-3N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
</tbody>
</table>

**VBAT-S-1 (Stainless steel)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread type</th>
<th>Accessory kit</th>
<th>Safety valve</th>
<th>Drain valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBAT05S1</td>
<td>NPT</td>
<td>VBAT5S-Y-4N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
<tr>
<td>VBAT10S1</td>
<td>NPT</td>
<td>VBAT10S-Y-4N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
<tr>
<td>VBAT20S1</td>
<td>NPT</td>
<td>VBAT20S-Y-4N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
<tr>
<td>VBAT38S1</td>
<td>NPT</td>
<td>VBAT38S-Y-4N</td>
<td>VBAT-E1</td>
<td>VBAT-V1</td>
</tr>
</tbody>
</table>

- **The accessory kit is a set of nos. ① to ④.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Model</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>O-ring</td>
<td>VBAT5A-Y-3N</td>
<td>1 (VBAT-A)</td>
</tr>
<tr>
<td>②</td>
<td>Hexagon socket head taper screwed plug (For drain port)</td>
<td>VBAT5A-Y-3N</td>
<td>1 (VBAT-A)</td>
</tr>
<tr>
<td>③</td>
<td>Hexagon socket head cap screw</td>
<td>VBAT5A-Y-3N</td>
<td>1 (VBAT-A)</td>
</tr>
<tr>
<td>④</td>
<td>Anchor bolt/nut</td>
<td>VBAT5A-Y-3N</td>
<td>1 (VBAT-A)</td>
</tr>
</tbody>
</table>

- **Keep the manufacturer’s certificate of compliance in a safe place.**
**Dimensions**

VBAT05AN1-E□-X105/VBAT05A1-E□-X105  
VBAT05SN1-E□-X105/VBAT05S1-E□-X105

Connected to VBA10A, 11A

![Diagram of VBAT05AN1-E□-X105/VBAT05A1-E□-X105](image)

- Safety valve (Supplied with product)
- Tank IN port 3/8"
- Tank OUT port 3/8"
- Inspection port 3/4" (With plug)
- Drain port 1/4"

![Diagram of VBAT05SN1-E□-X105/VBAT05S1-E□-X105](image)

- Safety valve (Supplied with product)
- Tank IN port 3/8"
- Tank OUT port 1/2"
- Inspection port 3/4" (With plug)
- Drain port 1/4"

- Booster regulator IN port 1/4"
- Booster regulator OUT port 1/4"
- EXH: 1/4"
- 4 x ø11

- Dimensions:
  - 32
  - 60
  - 200
  - 352
  - 374**

- * Order the booster regulator VBA separately.
- *1 The length may be longer than the specification if the plugs mounted on the tank are not tightly fitted to the ends.

VBAT10AN1-E□-X105/VBAT10A1-E□-X105  
VBAT10SN1-E□-X105/VBAT10S1-E□-X105

Connected to VBA10A, 11A

![Diagram of VBAT10AN1-E□-X105/VBAT10A1-E□-X105](image)

- Safety valve (Supplied with product)
- Tank IN port 3/8"
- Tank OUT port 1/2"
- Inspection port 3/4" (With plug)
- Drain port 1/4"

- Booster regulator IN port 1/4"
- Booster regulator OUT port 1/4"
- EXH: 1/4"
- 4 x ø11

- Dimensions:
  - 312
  - 498
  - 522**

- * Order the booster regulator VBA separately.
- *1 The length may be longer than the specification if the plugs mounted on the tank are not tightly fitted to the ends.

Connected to VBA20A

![Diagram of VBAT20A](image)

- Safety valve (Supplied with product)
- Tank IN port 3/8"
- Tank OUT port 1/2"
- Inspection port 3/4" (With plug)
- Drain port 1/4"

- Booster regulator IN port 1/4"
- Booster regulator OUT port 1/4"
- EXH: 1/4"
- 4 x ø11

- Dimensions:
  - 367
  - 364

- Connected to VBA22A

![Diagram of VBAT22A](image)

- Safety valve (Supplied with product)
- Tank IN port 3/8"
- Tank OUT port 1/2"
- Inspection port 3/4" (With plug)
- Drain port 1/4"

- Booster regulator IN port 1/4"
- Booster regulator OUT port 1/4"
- EXH: 1/4"
- 4 x ø11

- Dimensions:
  - 417
  - 442

- * Order the booster regulator VBA separately.
- *1 The length may be longer than the specification if the plugs mounted on the tank are not tightly fitted to the ends.
VBAT-X105

Dimensions

VBAT20AN1-E□-X105/VBAT20A1-E□-X105
VBAT20SN1-E□-X105/VBAT20S1-E□-X105
Connected to VBA20A, 40A, 43A

VBAT38AN1-E□-X105/VBAT38A1-E□-X105
VBAT38SN1-E□-X105/VBAT38S1-E□-X105
Connected to VBA20A, 40A, 43A

The booster regulator is not subject to ASME standards.

Safety Instructions | Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.
Increase factory air pressure by up to 4 times! Air-only operation requires no power supply, reduces heat generation, and allows easy installation.

Renewed model with pressure increase ratio 2 to 4 times (VBA11A)

No power supply or wiring needed
There is no need to install dedicated electrical wiring.

Easy installation
Simply install the unit in the air line. Requires far less space than installing the compressor.

Low heat generation
Very little heat is generated because no electricity is used, and there is no impact on cylinders, solenoid valves, etc.

Air-only operation
Operation is safe because no electricity is used.

Booster Regulator/Series VBA

Air Tank/Series VBAT
Booster Regulator Series VBA

**Improved service life**
- Floating piston structure
- Grease retaining groove
  - Except VBA10A, 11A

**Reduced noise**
- Metal noise reduced by a bumper on the impact part of the switch valve
- Exhaust noise reduced by a high-noise reduction silencer

**Improved reliability**
- Built-in mesh filter at IN port
  - Prevents operation failure due to foreign matter.
- Grease retaining groove
- Floating structure

**Anti-condensation**
- Integrated air-feeding tube with the main tube
  - Mitigates condensation caused by cooling during exhaust expansion.

**Elbow silencer added** *(Option)*
- Space saving when installed has been realized.
  - Except VBA2A, 4A

**1/8” gauge ports**
- Allows use of standard fittings for remote pressure monitoring, etc.
  - Gauge ports changed from 1/16” to 1/8” *(VBA1A, 2A)*

**Air-operated type**
- Max. operating pressure 1.6 MPa

**Fourfold pressure increase type**

![Diagram of Booster Regulator Series VBA](image_url)
**Air Tank Series VBAT**

**Perfect fit with a booster regulator**
This is an air tank to which a booster regulator can be connected compactly. It can be used alone as a tank. The pressure vessel law is different from country to country, so as an air tank suitable to a country needs to be confirmed.

**Extensive product lineup**
To meet a variety of usage environment and pressure specifications, models are available in two materials, stainless steel 304 and carbon steel (SS400), and in four sizes ranging from 5 liters to 38 liters.

<table>
<thead>
<tr>
<th>Body size</th>
<th>VBA10A-02 (0.2 to 2.0 MPa)</th>
<th>VBA11A-02 (0.2 to 2.0 MPa)</th>
<th>VBA10A-03 (2.0 to 4.0 MPa)</th>
<th>VBA11A-03 (2.0 to 4.0 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>VBA20A-03</td>
<td>VBA22A-03</td>
<td>VBA40A-04</td>
<td>VBA42A-04</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>VBA43A-04 (0.2 to 1.6 MPa)</td>
<td>VBA43A-04 (0.2 to 1.6 MPa)</td>
<td>VBA40A-04</td>
<td>VBA42A-04</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>VBA42A-04</td>
<td>VBA42A-04</td>
<td>VBA43A-04 (0.2 to 1.6 MPa)</td>
<td>VBA43A-04 (0.2 to 1.6 MPa)</td>
</tr>
</tbody>
</table>

Caution: When used as a single unit (not connected with a booster regulator) and pressurized at over 1 MPa at normal temperatures, the air tank falls under the scope of the “High Pressure Gas Safety Act” in Japan.
How to Order

**Series VBA** Booster Regulator

**VBA 40A**

**Body size**
- 10A: 1/4", Handle-operated type
- 20A: 3/8", Handle-operated type
- 40A: 1/2", Handle-operated type
- 22A: 3/8", Air-operated type
- 42A: 1/2", Air-operated type
- 43A: 1/2", Max. operating pressure 1.6 MPa
- 11A: 1/4", Handle-operated type

**Pressure increase ratio**
- Twice: 10A, 20A, 22A, 40A, 42A, 43A
- 2 to 4 times: 11A

**Port size**
- 02: 1/4" (VBA1A)
- 03: 3/8" (VBA2A)
- 04: 1/2" (VBA4A)

**Thread type**
- Nil: Standard product
- G: Pressure gauge
- N: Silencer
- S: High-noise reduction silencer
- GN: Pressure gauge, Silencer
- GS: Pressure gauge, High-noise reduction silencer
- LN: Elbow silencer
- LS: Elbow high-noise reduction silencer
- GLN: Pressure gauge, Elbow silencer
- GLS: Pressure gauge, Elbow high-noise reduction silencer

**Option**
- Nil: None
- G: Pressure gauge
- N: Silencer
- S: High-noise reduction silencer
- GN: Pressure gauge, Silencer
- GS: Pressure gauge, High-noise reduction silencer
- LN: Elbow silencer
- LS: Elbow high-noise reduction silencer
- GLN: Pressure gauge, Elbow silencer
- GLS: Pressure gauge, Elbow high-noise reduction silencer

**Semi-standard**
- Nil: Pressure unit on the product name label and pressure gauge: psi
- Z: Note) Thread type: NPT, NPTF

Note) Pressure increase ratio: Twice, 2 to 4 times

**Combination of Thread Type and Options**

<table>
<thead>
<tr>
<th>Body size</th>
<th>Thread type</th>
<th>Option</th>
<th>Semi-standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>10A</td>
<td>Nil</td>
<td>G</td>
<td>N</td>
</tr>
<tr>
<td>11A</td>
<td>N</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>20A</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22A</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40A</td>
<td>Nil</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>42A</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43A</td>
<td>T</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Air Tank Compatibility Chart**

<table>
<thead>
<tr>
<th>Air tank</th>
<th>VBA1A</th>
<th>VBA2A</th>
<th>VBA4A</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBAT05A</td>
<td>●</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>VBAT05S</td>
<td>●</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>VBAT10A</td>
<td>●</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>VBAT10S</td>
<td>●</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>VBAT20A</td>
<td>—</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>VBAT20S</td>
<td>—</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>VBAT38A</td>
<td>—</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>VBAT38S</td>
<td>—</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Note) Refer to "Combination of Thread Type and Options."
Standard Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>VBA10A-02</th>
<th>VBA20A-03</th>
<th>VBA40A-04</th>
<th>VBA22A-03</th>
<th>VBA42A-04</th>
<th>VBA43A-04</th>
<th>VBA11A-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Compressed air</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure increase ratio</td>
<td>Twice</td>
<td>2 to 4 times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure adjustment mechanism</td>
<td>Handle-operated with relief mechanism Note 1)</td>
<td>Air-operated</td>
<td>Handle-operated with relief mechanism Note 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. flow rate $\text{m}^3/\text{min}$ (ANR)</td>
<td>230</td>
<td>1000</td>
<td>1900</td>
<td>1000</td>
<td>1900</td>
<td>1600</td>
<td>70</td>
</tr>
<tr>
<td>Set pressure range (MPa)</td>
<td>0.2 to 2.0</td>
<td>0.2 to 1.0</td>
<td>0.2 to 1.0</td>
<td>0.2 to 1.6</td>
<td>0.2 to 2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply pressure range (MPa)</td>
<td>0.1 to 1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proof pressure (MPa)</td>
<td>3</td>
<td>1.5</td>
<td>2.4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size (Rc)</td>
<td>1/4</td>
<td>3/8</td>
<td>1/2</td>
<td>3/8</td>
<td>1/2</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td>Pressure gauge port size (Rc)</td>
<td>1/8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature ($^\circ$C)</td>
<td>2 to 50 (No freezing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td>Horizontal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Grease (Non-lube)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.84</td>
<td>3.9</td>
<td>8.6</td>
<td>3.9</td>
<td>8.6</td>
<td>8.6</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Note 1) If the OUT pressure is higher than the set pressure by the handle, excess pressure is exhausted from the back of the handle.

Note 2) KT-VBA10A-7 is a pressure gauge with fitting. (Please order two units when using with IN and OUT.)

Options/Part No.

Pressure Gauge, Silencer (When thread type is Rc or G.)

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBA10A-02</th>
<th>VBA20A-03</th>
<th>VBA40A-04</th>
<th>VBA22A-03</th>
<th>VBA42A-04</th>
<th>VBA43A-04</th>
<th>VBA11A-02</th>
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<tbody>
<tr>
<td>Pressure gauge</td>
<td>G</td>
<td>G27-20-01</td>
<td>G36-10-01</td>
<td>KT-VBA22A-7</td>
<td>G36-10-01</td>
<td>G27-20-01</td>
<td>G27-20-01</td>
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<tr>
<td>Silencer</td>
<td>N</td>
<td>AN20-02</td>
<td>AN30-03</td>
<td>AN40-04</td>
<td>AN30-03</td>
<td>AN40-04</td>
<td>AN20-02</td>
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<tr>
<td>High-noise reduction silencer</td>
<td>S</td>
<td>ANA1-02</td>
<td>ANA1-03</td>
<td>ANA1-04</td>
<td>ANA1-03</td>
<td>ANA1-04</td>
<td>ANA1-02</td>
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<tr>
<td>Elbow for silencer</td>
<td>KT-VBA10A-18</td>
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<td></td>
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</tr>
</tbody>
</table>

Note 1) In the case of options GN, two pressure gauges and one silencer are included in the same container as accessories.

Note 2) KT-VBA22A-7 is a pressure gauge with fitting. (Please order two units when using with IN and OUT.)

Pressure Gauge, Silencer (When thread type is NPT or NPTF.)

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBA10A-02</th>
<th>VBA20A-03</th>
<th>VBA40A-04</th>
<th>VBA22A-03</th>
<th>VBA42A-04</th>
<th>VBA43A-04</th>
<th>VBA11A-02</th>
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</thead>
<tbody>
<tr>
<td>Pressure gauge</td>
<td>G</td>
<td>G27-20-01</td>
<td>G36-10-N01</td>
<td>KT-VBA22A-7N</td>
<td>G36-10-N01</td>
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<td>Pressure gauge</td>
<td>G</td>
<td>G27-20-01</td>
<td>G36-10-N01</td>
<td>KT-VBA22A-7N</td>
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<tr>
<td>Silencer</td>
<td>N</td>
<td>AN20-N02</td>
<td>AN30-N03</td>
<td>AN40-N04</td>
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<td>High-noise reduction silencer</td>
<td>S</td>
<td>ANA1-N03</td>
<td>ANA1-N04</td>
<td>ANA1-N03</td>
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<td>ANA1-N04</td>
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<tr>
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</table>

Note 1) In the case of options GN, two pressure gauges and one silencer are included in the same container as accessories.

Note 2) KT-VBA22A-7N, KT-VBA22A-8N are pressure gauges with fittings. (Please order two units when using with IN and OUT.)

Note 3) Under the new measurement law, the pressure unit of “psi” on the pressure gauges cannot be used in Japan.

Note 4) Pressure unit on the pressure gauge: psi

Related Products/Part No.

Mist Separator, Exhaust Cleaner

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBA10A-02</th>
<th>VBA20A-03</th>
<th>VBA40A-04</th>
<th>VBA22A-03</th>
<th>VBA42A-04</th>
<th>VBA43A-04</th>
<th>VBA11A-02</th>
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</thead>
<tbody>
<tr>
<td>Mist separator</td>
<td>AM250C-02</td>
<td>AM50C-04, 06</td>
<td>AM550C-06, 10</td>
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<tr>
<td>Exhaust cleaner</td>
<td>AMC310-03</td>
<td>AMC510-06</td>
<td>AMC610-10</td>
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</tr>
</tbody>
</table>

Note) Refer to page 935 for air tanks, page 201 for mist separators and Best Pneumatics No.6 for exhaust cleaners.

Refer to the separate operation manual for the connection method.

**Caution**

1. System configuration
   - The IN port of the booster regulator has metallic mesh to prevent dust from entering the booster regulator. However, it cannot remove dust continuously or separate drainage. Make sure to install a mist separator (AM series) on the inlet side of the booster regulator.
   - The booster regulator has a sliding part inside, and it generates dust. Also, install an air purification device such as an air filter or a mist separator on the outlet side as necessary.
   - Connect a lubricator to the outlet side, because the accumulated oil in the booster regulator may result in a malfunction.

2. Exhaust air measures
   - Provide a dedicated pipe to release the exhaust air from each booster regulator. If exhaust air is converged into a pipe, the back pressure that is created could cause improper operation.
   - Depending on the necessity, install a silencer or an exhaust cleaner on the exhaust port of the booster regulator to reduce the exhaust noise.

3. Maintenance space
   - Allow the sufficient space for maintenance and inspection.
**Series VBA**

### VBA10A

**Flow-rate Characteristics**

- **Outlet pressure (MPa):**
  - 0.5
  - 0.6
  - 0.7
  - 0.8
  - 0.9
  - 1.0

- **Outlet air flow rate (L/min (ANR)):**
  - 0
  - 200
  - 400
  - 600
  - 800
  - 1000
  - 1200

**Pressure Characteristics**

- **Inlet pressure (MPa):**
  - 0
  - 0.2
  - 0.4
  - 0.6
  - 0.8
  - 1.0

**Set point**

- **Outlet pressure (MPa):**
  - 0
  - 500
  - 1000
  - 1500
  - 2000

**Charge Characteristics**

- **Charge time per 10 L (s):**
  - 1
  - 1.1
  - 1.2
  - 1.3
  - 1.4

### VBA20A, 22A

**Flow-rate Characteristics**

- **Outlet pressure (MPa):**
  - 0.5
  - 0.6
  - 0.7
  - 0.8
  - 0.9
  - 1.0

- **Outlet air flow rate (L/min (ANR)):**
  - 0
  - 200
  - 400
  - 600
  - 800
  - 1000
  - 1200

**Pressure Characteristics**

- **Inlet pressure (MPa):**
  - 0
  - 0.2
  - 0.4
  - 0.6
  - 0.8
  - 1.0

**Set point**

- **Outlet pressure (MPa):**
  - 0
  - 500
  - 1000
  - 1500
  - 2000

**Charge Characteristics**

- **Charge time per 10 L (s):**
  - 1
  - 1.1
  - 1.2
  - 1.3
  - 1.4

### VBA40A, 42A

**Flow-rate Characteristics**

- **Outlet pressure (MPa):**
  - 0.5
  - 0.6
  - 0.7
  - 0.8
  - 0.9
  - 1.0

- **Outlet air flow rate (L/min (ANR)):**
  - 0
  - 200
  - 400
  - 600
  - 800
  - 1000
  - 1200

**Pressure Characteristics**

- **Inlet pressure (MPa):**
  - 0
  - 0.2
  - 0.4
  - 0.6
  - 0.8
  - 1.0

**Set point**

- **Outlet pressure (MPa):**
  - 0
  - 500
  - 1000
  - 1500
  - 2000

**Charge Characteristics**

- **Charge time per 10 L (s):**
  - 1
  - 1.1
  - 1.2
  - 1.3
  - 1.4

### VBA20A, 22A

- **The time required to charge pressure in the tank from 0.7 MPa to 0.95 MPa at 0.5 MPa supply pressure:**
  
  \[
  P_2 = \frac{0.7}{0.5} = 1.4, \quad P_2 = \frac{0.95}{0.5} = 1.9
  \]

  With the pressure increase ratio from 1.4 to 1.9, the charge time of 23 – 6 = 17 sec. (t) is given by the graph. Then, the charge time (T) for a 10 L tank:

  \[
  T = t \times \frac{V}{10} = 17 \times \frac{10}{10} = 17 \text{ (s)}.
  \]

### VBA40A, 42A

- **The time required to charge pressure in the tank from 0.8 MPa to 1.0 MPa at 0.5 MPa supply pressure:**
  
  \[
  P_2 = \frac{0.8}{0.5} = 1.6, \quad P_2 = \frac{1.0}{0.5} = 2.0
  \]

  With the pressure increase ratio from 1.6 to 2.0, the charge time of 11.5 – 3.8 = 7.7 sec. (t) is given by the graph. Then, the charge time (T) for a 100 L tank:

  \[
  T = t \times \frac{V}{100} = 7.7 \times \frac{100}{100} = 77 \text{ (s)}.
  \]
### Booster Regulator Series VBA

**VBA43A**

**Flow-rate Characteristics**

![Flow-rate Characteristics](image)

**Pressure Characteristics**

- Inlet pressure: 0.7 MPa
- Outlet pressure: 1.0 MPa
- Flow rate: 30 L/min (ANR)

**Charge Characteristics**

![Charge Characteristics](image)

**VBA43A**

- The time required to charge pressure in the tank from 0.8 MPa to 1.0 MPa at 0.5 MPa supply pressure:
  
  \[
  \frac{P_2}{P_1} = 0.8 \quad \frac{P_2}{P_1} = 1.6 \quad \frac{P_2}{P_1} = 2.0
  \]

  With the pressure increase ratio from 1.6 to 2.0, the charge time of 4.5 – 1.3 = 3.2 sec. (t) is given by the graph. Then, the charge time (T) for a 100 L tank:

  \[
  T = t \times \frac{V}{10} = 3.2 \times \frac{100}{10} = 32 \text{ (s)}.
  \]

**VBA11A**

**Flow-rate Characteristics**

![Flow-rate Characteristics](image)

**Pressure Characteristics**

- Inlet pressure: 0.8 MPa
- Outlet pressure: 2.0 MPa
- Flow rate: 10 L/min (ANR)

**Charge Characteristics**

![Charge Characteristics](image)

**VBA11A**

- The time required to charge pressure in the tank from 1.0 MPa to 1.5 MPa at 0.5 MPa supply pressure:
  
  \[
  \frac{P_2}{P_1} = 1.0 \quad \frac{P_2}{P_1} = 2.0 \quad \frac{P_2}{P_1} = 1.5 \quad \frac{P_2}{P_1} = 3.0
  \]

  With the pressure increase ratio from 2.0 to 3.0, the charge time of 147 – 58 = 89 sec. (t) is given by the graph. Then, the charge time (T) for a 10 L tank:

  \[
  T = t \times \frac{V}{10} = 89 \times \frac{10}{10} = 89 \text{ (s)}.
  \]

**Pulsation**

- Pulsation is decreased with a tank.

- If the outlet capacity is undersized, pulsation may occur.

**VBAT05A**

![VBAT05A](image)

**VBAT10A, 20A, 38A**

![VBAT10A, 20A, 38A](image)

- Conditions:
  - Inlet pressure: 0.5 MPa
  - Outlet set pressure: 1 MPa
  - Flow rate: Between 0 and max. flow rate

- Performance of air tank
  - Alleviates the pulsation generated on the outlet side.
  - When air consumption exceeds air supply during intermittent operation, required air will be accumulated in the tank for use.

- This does not apply for continuous operation.

**Performance of air tank**

- Alleviates the pulsation generated on the outlet side.
- When air consumption exceeds air supply during intermittent operation, required air will be accumulated in the tank for use.
- This does not apply for continuous operation.

**Conditions**

- Inlet pressure: 0.5 MPa
- Outlet set pressure: 1 MPa
- Flow rate: Between 0 and max. flow rate

For continuous operation, this does not apply.
Sizing can be achieved with the SMC Pneumatic System Energy Saving Program Ver. 3.1
(which can be downloaded from the SMC website: http://www.smcworld.com)

**START**

Provide requisite conditions for selection.

**Calculate required air flow rate \( Q \).**

Select booster regulator size from flow-rate characteristics table.

**Judgement of flow rate**

NO: Need no tank

YES: The VBA4\(\text{A}^4\)A can supply necessary pressure.

Obtain the tank capacity \( V \).

\[
V = \frac{(Q - Q_b) \times (T_c \times K/60)}{(P_2 - P_1) \times 9.9}
\]

Select the tank capacity over \( V \).

Calculate time \( T \) from charge characteristics table.

\[
T = \frac{4.6}{10} \times \frac{V}{1.0 - 0.8} \times \frac{Z}{1} = 3.5 \text{ [s]}
\]

**Judgement of charge time \( T \leq T_s \)**

NO: Extend stop time \( T_s \) up to charge time \( T \) or more.

YES: Increase number of booster regulators \( Z \) to decrease \( T \).

END

When running continuously for longer periods of time, confirm the life expectancy. When the life expectancy is shorter than required, select a larger sized booster regulator.
**Working Principle**

The **IN** air passes through the check valve to **booster chambers A and B**. Meanwhile, air is supplied to **drive chamber B** via the governor and the switching valve. Then, the air pressure from **drive chamber B** and **booster chamber A** is applied to the piston, boosting the air in **booster chamber B**. As the piston travels, the boosted air is pushed via the check valve to the **OUT** side. When the piston reaches to the end, the piston causes the switching valve to switch, so that **drive chamber B** is in the exhaust state and **drive chamber A** is in the supply state respectively. Then, the piston reverses its movement, this time, the pressures from **booster chamber B** and **drive chamber A** boosts the air in **booster chamber A** and sends it to the **OUT** side. The process described above is repeated to continuously supply highly pressurized air from the **IN** to the **OUT** side. The governor establishes the outlet pressure by handle operation and pressure adjustment in the drive chamber by feeding back the outlet pressure.

**Circuit Example**

- When only some of the machines in the plant require high-pressure air, booster regulators can be installed for only the equipment that requires it. This allows the overall system to use low-pressure air while accommodating machines requiring high-pressure air.

- When charging a tank or the like from a source at atmospheric pressure, a circuit with a check valve can be used to reduce the charge time by allowing air to pass through the check valve up to the inlet pressure.

- When only one side of the cylinder is used for work, booster regulators can be installed only on the lines that require them to reduce the overall air consumption volume.

- When the actuator output is insufficient but space limitations prohibit switching to a larger cylinder diameter, a booster regulator can be used to increase the pressure. This makes it possible to boost the output without replacing the actuator.

- When a certain level of output is required but the cylinder size must be kept small so that the driver remains compact.

Initially, inlet pressure ($P_1$) passes through the check valve, fills $P_2$, and results in $P_1 = P_2$. The shortening time table below shows the effect of using a check valve by-pass.
**Warning**

1. Warning concerning abnormal outlet pressure
   - If there is a likelihood of causing an outlet pressure drop due to unforeseen circumstances such as equipment malfunction, thus leading to a major problem, take safety measures on the system side.
   - Because the outlet pressure could exceed its set range if there is a large fluctuation in the inlet pressure, leading to unexpected accidents, take safety measures against abnormal pressures.
   - Operate the equipment within its maximum operating pressure and set pressure range.

2. Residual pressure measures
   - Connect a 3-port valve to the OUT side of the booster regulator if the residual pressure must be released quickly from the outlet pressure side for maintenance, etc. (Refer to the diagram below.) The residual outlet pressure side cannot be released even if the 3-port valve is connected to the IN side because the check valve in the booster regulator will activate.

   ![Diagram](image)

   - After operation is finished, release the supply pressure at the inlet. This stops the booster regulator from moving needlessly and prevents operating malfunctions.

**Caution**

1. Check the specifications.
   - Consider the operating conditions and operate this product within the specification range that is described in this catalog.

2. Selection
   - Based on the conditions (such as pressure, flow rate, takt time) required for the outlet side of the booster regulator, select the size of the booster regulator in accordance with the selection procedures described in this catalog or model selection program.
   - Use the VBA11A (pressure increase ratio 4) with pressure increase ratio 2 to 4. Usage of pressure increase ratio below 2 is preferred for the VBA10A (pressure increase ratio 2). A stable operation and increased life expectancy will result.
   - Inlet supply pressure volume is approximately twice (pressure increase ratio 2), approx. 4 times (pressure increase ratio 4)) the volume of the outlet side. Booster regulator requires the inlet side volume which is the sum of the flow volume running into the outlet side and the volume exhausted from E port (for driving), because air is the power source.
   - When running continuously for longer periods of time, confirm the life expectancy. The life expectancy of a booster regulator is dependent upon the operational cycle. Thus, when used for driving cylinders, etc. in the outlet side, life expectancy will be reduced.
   - Make sure the outlet pressure is set 0.1 MPa or higher than the inlet pressure. A pressure difference below 0.1 MPa makes the operation unstable and may result in a malfunction.

**Mounting**

1. Transporting
   - When transporting this product, hold it lengthwise with both hands. Never hold it by the black handle that protrudes from the center because the handle could become detached from the body, causing the body to fall and leading to injury.

2. Installation
   - Install this product so that the silver-colored tie-rods and cover are placed horizontally. If mounted vertically, it may result in a malfunction.
   - Because the piston cycle vibration is transferred, use the following mounting bolts (VBA1: M5; VBA2, 4: M10) and tighten them with the specified torque (VBA1: 3 N·m; VBA2, 4: 24 N·m).
   - If the transmission of vibration is not preferred, insert an isolating rubber material before installation.

**Piping**

1. Flushing
   - Use an air blower to flush the piping to thoroughly remove any cutting chips, cutting oil, or debris from the piping inside, before connecting them. If they enter the inside of the booster regulator, they could cause the booster regulator to malfunction or its durability could be affected.

2. Piping size
   - To bring the booster regulator’s ability into full play, make sure to match the piping size to the port size.

**Air Supply**

1. Quality of air source
   - Connect a mist separator to the inlet side near the booster regulator. If the quality of the compressed air is not thoroughly controlled, the booster regulator could malfunction (without being able to boost) or its durability could be affected.
   - If dry air (atmospheric pressure dew point: –23°C or less) is used, the life expectancy may be shortened because dry air will accelerate evaporation of grease inside.

**Operating Environment**

1. Installation location
   - Do not install this product in an area that is exposed to rainwater or direct sunlight.
   - Do not install in locations influenced by vibrations. If it must be used in such an area due to unavoidable circumstances, please contact SMC beforehand.
**Handling**

⚠️ **Caution**

1. **Setting the pressure on the handle-operated type**
   - If air is supplied to the product in the shipped state, the air will be released.
   - Set the pressure by quickly pulling up on the governor handle, releasing the lock, and rotating the handle in the direction of the arrow (+).
   - There is an upper and lower limit for the handle rotation. If over-rotating the handle even after reaching to the limit, the internal parts may be damaged. If the handle suddenly feels heavy while being turned, stop turning the handle.
   - Once the setting is completed, push the handle down and lock it.
   - To decrease the outlet pressure, after the pressure has been set, rotate the handle in the direction of the arrow (–). The residual air will be released from the area of the handle, due to the relief construction of the governor.
   - To reset the pressure, first reduce the pressure so that it is lower than the desired pressure; then, set it to the desired pressure.

2. **Setting the pressure on the air-operated type (VBA22A, 42A)**
   - Connect the outlet pipe of the pilot regulator for the remote control to the pilot port (P). (Refer to the diagram below.)
   - Refer to the graph below for the relationship between the pilot pressure and outlet pressure.
   - The AR20 and AW20 are recommended for the pilot regulator.

   ![Pilot regulator](image)

   - The outlet pressure is twice the pilot pressure.
   - When the inlet pressure is 0.4 MPa:

     | Pilot pressure | Outlet pressure |
     |----------------|-----------------|
     | 0.2 MPa to 0.4 MPa | 0.4 MPa to 0.8 MPa |

3. **Draining**
   - If this product is used with a large amount of drainage accumulated in the filter, mist separator or tank, the drainage could flow out, leading to equipment malfunction. Therefore, drain the system once a day. If it is equipped with an auto drain, check its operation once a day.

4. **Exhaust**
   - Exhausting time from E port may be longer for a booster regulator which is set to switch in longer hour intervals. This is not an abnormal phenomenon.

5. **Maintenance**
   - Life expectancy varies depending on the quality of air and the operating conditions. Signs that the unit is reaching the end of its service life include the following:
     - Constant bleed from under the handle.
     - Air exhaust noise can be heard from the booster regulator at 10 to 20 second intervals even when there is no air consumption on the outlet side.
   - Conduct maintenance earlier than scheduled in such cases.
   - When maintenance is required, confirm the model and serial number of the booster regulator, and please contact SMC for maintenance kit.
   - Conduct maintenance according to the specified maintenance procedure by individuals possessing enough knowledge and experiences in maintaining pneumatic equipment.
   - The list of replacement parts and kit number are shown on page 932, and the figure shows the position of the parts.
Construction/Replacement Parts

VBA10A  VBA11A

Air-operated type

VBA20A, 22A, VBA40A, 42A, 43A

Replacement Parts/Kit No.

Place an order with the following applicable kit number.

<table>
<thead>
<tr>
<th>Model</th>
<th>Kit no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBA10A</td>
<td>KT-VBA10A-1</td>
</tr>
<tr>
<td>VBA20A</td>
<td>KT-VBA20A-1</td>
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<tr>
<td>VBA22A</td>
<td>KT-VBA22A-1</td>
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<td>VBA40A</td>
<td>KT-VBA40A-1</td>
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<td>VBA42A</td>
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<td>VBA43A</td>
<td>KT-VBA43A-1</td>
</tr>
<tr>
<td>VBA11A</td>
<td>KT-VBA11A-20</td>
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</tbody>
</table>

The kit includes the parts from ① to ⑦ and a grease pack.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Model</th>
<th>VBA10A</th>
<th>VBA20A</th>
<th>VBA40A</th>
<th>VBA22A</th>
<th>VBA42A</th>
<th>VBA43A</th>
<th>VBA11A</th>
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<tbody>
<tr>
<td>1</td>
<td>Piston seal</td>
<td></td>
<td>2</td>
<td></td>
<td>2 large</td>
<td>1 small</td>
<td>2</td>
<td></td>
<td>1 each large and small</td>
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<tr>
<td>2</td>
<td>Governor assembly</td>
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<tr>
<td>6</td>
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<tr>
<td>7</td>
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</tr>
</tbody>
</table>

* The grease pack has 10 g of grease.
* Make sure to refer to the procedure for maintenance.
Dimensions

VBA10A-02

IN side
1/8

OUT side
1/8

Pressure gauge (Option)

VBA11A-02

IN side
1/8

OUT side
1/8

Pressure gauge (Option)

VBA20A-03

IN side
1/8

OUT side
1/8

Pressure gauge (Option)

VBA40A-04

IN side
1/8

OUT side
1/8

Pressure gauge (Option)
Series VBA

Dimensions

VBA22A-03

IN side gauge port
1/8
OUT side gauge port
1/8

Pressure gauge (Option)
300

39

Pilot port
1/8

28

EXH port
3/8

404

40

Silencer (Option)

28

3/8

96

116

32

4 x ø12

59

VBA42A-04

IN side gauge port
1/8
OUT side gauge port
1/8

Pressure gauge (Option)
404

40

Pilot port
1/8

85

EXH port
1/2

Silencer (Option)

221

1/2

150

4 x ø12

98

118

43

VBA43A-04

IN side gauge port
1/8
OUT side gauge port
1/8

Pressure gauge (Option)
404

40

Pilot port
1/8

85

EXH port
1/2

Silencer (Option)

221

1/2

150

4 x ø12

98

118

43

Made to Order

1 Copper-free/Fluorine-free
The inner or outer copper parts material has been changed to stainless steel or aluminum. The fluorine resin parts has been changed to general resin.

2 CE explosion-proof directive (ATEX) compliant

56 — Standard model no.
Made to Order
CE explosion-proof directive (ATEX): Category 3GD

3 Ozone resistant
Ozone resistance is strengthened through the use of fluororubber (diaphragm) and hydrogenated NBR (valve, rod seal) for the rubber parts of the seal material.

20 — Standard model no.
Made to Order
Copper-free/Fluorine-free

22 — Standard model no.
Made to Order
Copper-free/Fluorine-free

For detailed dimensions, specifications and lead times, please contact SMC.

∗ For booster regulator with pressure gauge, please consult SMC.
∗ This option cannot be selected for air tank with safety valve.

Made to Order

Copper-free/Fluorine-free

CE explosion-proof directive (ATEX)

Ozone resistant

934

SMC
Air Tank
Series VBAT

How to Order

- Compact connections are possible with booster regulators.
- It can be used alone as a tank.
- Also partially compatible with overseas standards

VBAT 10 A 1 - S

Tank internal capacity

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Internal capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>5 L</td>
</tr>
<tr>
<td>10</td>
<td>10 L</td>
</tr>
<tr>
<td>20</td>
<td>20 L</td>
</tr>
<tr>
<td>38</td>
<td>38 L</td>
</tr>
</tbody>
</table>

Material

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Carbon steel (SS400)</td>
</tr>
<tr>
<td>S</td>
<td>Stainless steel 304</td>
</tr>
</tbody>
</table>

Note: The thread type for each port is Rc.

Option

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>V</td>
<td>Drain valve</td>
</tr>
</tbody>
</table>

CE Certified Product

VBAT 10 A F - SV - Q

Tank internal capacity

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Internal capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>5 L</td>
</tr>
<tr>
<td>10</td>
<td>10 L</td>
</tr>
<tr>
<td>20</td>
<td>20 L</td>
</tr>
<tr>
<td>38</td>
<td>38 L</td>
</tr>
</tbody>
</table>

Material

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Carbon steel (SS400)</td>
</tr>
</tbody>
</table>

Thread type

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Rc</td>
</tr>
<tr>
<td>V</td>
<td>G</td>
</tr>
</tbody>
</table>

CE certified product (Self-declaration document attached)

Accessories

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Accessories</th>
<th>Applicable model</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV</td>
<td>Safety valve</td>
<td>VBAT20A, VBAT38A</td>
</tr>
<tr>
<td>SV</td>
<td>Safety valve</td>
<td>VBAT20A, VBAT38A</td>
</tr>
</tbody>
</table>

Note: A safety valve port is provided only when option R or S is selected.

Product Not Applicable to the ASME Standard

VBAT 05 A N 1 - SV - X11

Tank internal capacity

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Internal capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>5 L</td>
</tr>
<tr>
<td>10</td>
<td>10 L</td>
</tr>
</tbody>
</table>

Material

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Carbon steel (SS400)</td>
</tr>
</tbody>
</table>

Thread type

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Rc</td>
</tr>
<tr>
<td>V</td>
<td>NPT</td>
</tr>
</tbody>
</table>

Note: Pressure unit of NPT products: psi. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Caution

When used as a single unit (not connected with a booster regulator) and pressurized at over 1 MPa at normal temperatures, the air tank falls under the scope of the “High Pressure Gas Safety Act” in Japan.
### Specifications

#### Standard Product (For Japanese Market)

<table>
<thead>
<tr>
<th>Model</th>
<th>VBAT05A</th>
<th>VBAT10A</th>
<th>VBAT20A</th>
<th>VBAT38A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>SV-Q</td>
<td>SV-Q</td>
<td>-RV-Q</td>
<td>-RV-Q</td>
</tr>
<tr>
<td>Tank capacity (L)</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>38</td>
</tr>
<tr>
<td>Max. operating pressure (MPa)</td>
<td>VBAT×A1</td>
<td>VBAT×S1</td>
<td>VBAT×S1</td>
<td>VBAT×S1</td>
</tr>
<tr>
<td>IN port size</td>
<td>3/8</td>
<td>1/2</td>
<td>3/8</td>
<td>1/2</td>
</tr>
<tr>
<td>OUT port size</td>
<td>3/8</td>
<td>1/2</td>
<td>1/2</td>
<td>3/4</td>
</tr>
<tr>
<td>Material</td>
<td>Carbon steel (SS400)</td>
<td>Stainless steel 304</td>
<td>Carbon steel (SS400)</td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>Outside: Silver paint, Inside: Rustproof paint</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Note) The accessories and options are included in the same container.

#### CE Certified Product

<table>
<thead>
<tr>
<th>Model</th>
<th>VBAT05A</th>
<th>VBAT10A</th>
<th>VBAT20A</th>
<th>VBAT38A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>SJ-Q</td>
<td>SJ-Q</td>
<td>-RV-Q</td>
<td>-RV-Q</td>
</tr>
<tr>
<td>Tank capacity (L)</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>38</td>
</tr>
<tr>
<td>Max. operating pressure (MPa)</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>IN port size</td>
<td>3/8</td>
<td>1/2</td>
<td>3/4</td>
<td>3/4</td>
</tr>
<tr>
<td>OUT port size</td>
<td>3/8</td>
<td>1/2</td>
<td>1/2</td>
<td>3/4</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>0 to 75</td>
<td>0 to 75</td>
<td>0 to 75</td>
<td>0 to 75</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>6.6</td>
<td>10</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Material</td>
<td>Carbon steel (SS400)</td>
<td>Carbon steel (SS400)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>Outside: Silver paint, Inside: Rustproof paint</td>
<td>Outside: Silver paint, Inside: Rustproof paint</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) The accessories and options are included in the same container.

#### Product Not Applicable to the ASME Standard

<table>
<thead>
<tr>
<th>Model</th>
<th>VBAT05A</th>
<th>VBAT10A</th>
<th>VBAT20A</th>
<th>VBAT38A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>SV-Q</td>
<td>SV-Q</td>
<td>-RV-Q</td>
<td>-RV-Q</td>
</tr>
<tr>
<td>Tank capacity (L)</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>38</td>
</tr>
<tr>
<td>Max. operating pressure (MPa)</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>IN port size</td>
<td>3/8</td>
<td>1/2</td>
<td>3/8</td>
<td>1/2</td>
</tr>
<tr>
<td>OUT port size</td>
<td>3/8</td>
<td>1/2</td>
<td>3/4</td>
<td>3/4</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>0 to 75</td>
<td>0 to 75</td>
<td>0 to 75</td>
<td>0 to 75</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>6.6</td>
<td>10</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Material</td>
<td>Carbon steel (SS400)</td>
<td>Carbon steel (SS400)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>Outside: Silver paint, Inside: Rustproof paint</td>
<td>Outside: Silver paint, Inside: Rustproof paint</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) The accessories and options are included in the same container.

### List of Air Tank for Overseas

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Law</th>
<th>Exportable models</th>
<th>Details</th>
<th>Option (Order it separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>High Pressure Gas Safety Law, Occupational Safety and Health Act</td>
<td>VBAT05A-X101, VBAT05S-X101, VBAT10A-X101, VBAT10S-X101, VBAT20A-X101, VBAT20S-X101, VBAT38A-X101, VBAT38S-X101</td>
<td>Exempted product, Compressed air, Max operating pressure: 0.97 MPa</td>
<td>VBAT-K (Safety valve), VBAT-V1 (Drain valve)</td>
</tr>
<tr>
<td>Singapore, Malaysia</td>
<td>Factory Act</td>
<td>VBAT05A-SV-X102, VBAT05A-RV-X102, VBAT10A-SV-X102, VBAT10A-RV-X102, VBAT20A-RV-X102, VBAT38A-RV-X102</td>
<td>Product complies with ASME specifications</td>
<td>JBA (Japan Boiler Association) certification attached</td>
</tr>
<tr>
<td>Thailand, Taiwan</td>
<td>No applicable standard</td>
<td>Standard product</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Warning

**1. Operating pressure**
- Operate this product below the maximum operating pressure. If it is necessary, take appropriate safety measures to ensure that the maximum operating pressure is not exceeded.
- When the tank alone is used
  - Use a pressure switch or a safety valve to ensure that the maximum operating pressure is not exceeded.

**2. Connection**
- Connect a filter or a mist separator to the OUT side of the tank. Because the inner surface of the tank is untreated, there is a possibility of dust flowing out to the outlet side.
- A VBA booster regulator can be connected directly with the tank accessories as indicated combinations below.

### Design

<table>
<thead>
<tr>
<th>Booster regulator</th>
<th>VBA10A</th>
<th>VBA20A</th>
<th>VBA40A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air tank</td>
<td>VBAT05A</td>
<td>VBAT05S</td>
<td>VBAT10A</td>
</tr>
<tr>
<td></td>
<td>VBAT10S</td>
<td>VBAT20S</td>
<td>VBAT38S</td>
</tr>
<tr>
<td></td>
<td>VBAT38A</td>
<td>VBAT38S</td>
<td></td>
</tr>
</tbody>
</table>

### Caution

**1. Operating pressure**
- Consider the operating conditions and operate this product within the specification range.
- When using the air tank with a booster regulator, refer to “Sizing” on page 928 or SMC Pneumatic System Energy Saving Program.

### Selection

**1. Accessories**
- Refer to the operation manual regarding combining booster regulators with older model air tanks.
- The accessories are secured by bands to the feet of the air tank. Once removed, make sure not to lose them.

**2. Installation**
- Install the tank away from people. It is dangerous if the accumulated air inside the tank were to seep out.
- Do not mount the air tank on a moving part or a place with vibration.
- When connecting a booster regulator with the tank, refer to the operation manual first, which is provided with the air tank before assembling.
- To mount the air tank on a floor surface, use the four holes to secure the tank with bolts or anchor bolts.

### Mounting

**1. Inspection**
- The use of pressure vessels could lead to an unexpected accident due to external damage or internal corrosion caused by drainage. Therefore, make sure to check periodically for external damage or corrosion inside the tank. An ultrasonic thickness indicator may also be used to check for any reduction in material thickness.

**2. Draining**
- If this product is used with a large amount of drainage, the drainage could flow out, leading to equipment malfunction or corrosion inside the tank. Therefore, drain the system once a day.
Options/Accessories/Part No.

<Standard Product>
For VBAT05A1 (Carbon Steel)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety valve (When selecting an option)</td>
<td>VBAT-R (Set pressure: 1 MPa), VBAT-S (Set pressure: 2 MPa)</td>
<td>VBAT-R (Set pressure: 1 MPa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain valve (When selecting an option)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) The set pressure of the safety valve cannot be changed.

Note 2) The safety valve is a safety measure that protects the tank from excess pressure. The valve opens automatically when the specified pressure is reached, releasing excess pressure inside the tank. The valve closes again when the pressure drops below a designated value. Select a pressure valve appropriate for the maximum operating pressure specification of the tank.

For VBAT05S1 (Stainless Steel)

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBAT05S1-□-Y-2</th>
<th>VBAT10S1-□-Y-2</th>
<th>VBAT20S1-□-Y-2</th>
<th>VBAT38S1-□-Y-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessory kit</td>
<td>VBAT5S-Y-4</td>
<td>VBAT10S-Y-4</td>
<td>VBAT20S-Y-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain valve (When selecting an option)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<CE Compliant Product>

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBAT05A□-SV-Q</th>
<th>VBAT10A□-SV-Q</th>
<th>VBAT20A□-RV-Q</th>
<th>VBAT38A□-RV-Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety valve</td>
<td>VBAT-S (Set pressure: 2 MPa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain valve (When selecting an option)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For VBAT05A1 (Carbon Steel)

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBAT05A1-□-X11</th>
<th>VBAT10A1-□-X11</th>
<th>VBAT05AN1-□-X11</th>
<th>VBAT10AN1-□-X11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread type</td>
<td>Rc</td>
<td>VBAT05A-Y-3</td>
<td>VBAT10A-Y-3</td>
<td>VBAT5A-Y-3-X11</td>
<td>VBAT10A-Y-3-X11</td>
</tr>
<tr>
<td>Safety valve (When selecting an option)</td>
<td>VBAT-S (Set pressure: 2 MPa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain valve (When selecting an option)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<Product Not Applicable to the ASME Standard>

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>VBAT05A□-X11</th>
<th>VBAT10A□-X11</th>
<th>VBAT05AN□-X11</th>
<th>VBAT10AN□-X11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread type</td>
<td>Rc</td>
<td>VBAT5A-Y-3</td>
<td>VBAT10A-Y-3</td>
<td>VBAT5A-Y-3-X11</td>
<td>VBAT10A-Y-3-X11</td>
</tr>
<tr>
<td>Safety valve (When selecting an option)</td>
<td>VBAT-S (Set pressure: 2 MPa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain valve (When selecting an option)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Accessory Kit is a Set of Nos. ① to ④. (For CE Compliant Product: ⑤⑥)

1. O-ring
2. Hexagon socket head taper screwed plug (For drain port)
3. Hexagon socket head cap screw
4. Anchor bolt
5. Bushing assembly
6. Hexagon socket head taper screwed plug (For safety valve port)

Material

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Carbon steel (SS400)</td>
</tr>
<tr>
<td>S</td>
<td>Stainless steel 304</td>
</tr>
</tbody>
</table>

Made to Order

1. Copper-free/Fluorine-free

For made-to-order products, please contact SMC.

Note 1) The thread type for each port is Rc.

Note 2) A stainless steel fitting and a drain valve are included in the same container as accessories. (For detailed dimensions, please contact SMC.) A safety valve cannot be selected.

Note 3) Since neither copper nor fluorine parts are used for the tank, a standard model can be used when options (safety valve and drain valve) are not necessary.
Dimensions: Standard Product (For Japanese Market)

**VBAT05A1**  Material: Carbon steel  
Connected to VBA10A, 11A

**VBAT10A1**  Material: Carbon steel  
Connected to VBA10A, 11A

**VBAT20A1**  Material: Carbon steel  
Connected to VBA20A, 40A

**VBAT22A**  Material: Carbon steel  
Connected to VBA22A, 42A

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end.
Dimensions: Standard Product (For Japanese Market)

**VBAT38A1** Material: Carbon steel
Connected to VBA20A, 40A

**VBAT05S1** Material: Stainless steel 304
Connected to VBA10A, 11A

**VBAT10S1** Material: Stainless steel 304
Connected to VBA10A, 11A

Connected to VBA20A

Connected to VBA22A

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end.

<table>
<thead>
<tr>
<th>Booster regulator model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBA20A</td>
<td>531</td>
<td>444</td>
<td>Rc 3/8</td>
<td>—</td>
</tr>
<tr>
<td>VBA40A</td>
<td>570</td>
<td>479.8</td>
<td>Rc 1/2</td>
<td>—</td>
</tr>
<tr>
<td>VBA22A</td>
<td>494</td>
<td>444</td>
<td>Rc 3/8</td>
<td>519</td>
</tr>
<tr>
<td>VBA42A</td>
<td>527</td>
<td>479.8</td>
<td>Rc 1/2</td>
<td>543</td>
</tr>
</tbody>
</table>

Note) When option G (pressure gauge) is selected.

Material: Stainless steel 304

Material: Carbon steel

Connected to VBA20A connected to VBA22A

Connected to VBA20A

Connected to VBA22A

Connected to VBA20A

Connected to VBA22A

Material: Stainless steel 304
Series VBAT

Dimensions: Standard Product (For Japanese Market)

**VBAT20S1** Material: Stainless steel 304

Connected to VBA20A, 40A

- Tank OUT port
- Booster regulator IN port
- Drain port
- Tank IN port

![Diagram of VBAT20S1](image)

<table>
<thead>
<tr>
<th>Booster regulator model</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (Rc)</th>
<th>D (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBA20A</td>
<td>481</td>
<td>394</td>
<td>3/8</td>
<td>—</td>
</tr>
<tr>
<td>VBA40A</td>
<td>520</td>
<td>429.8</td>
<td>1/2</td>
<td>—</td>
</tr>
<tr>
<td>VBA22A</td>
<td>444</td>
<td>394</td>
<td>3/4</td>
<td>469</td>
</tr>
<tr>
<td>VBA42A</td>
<td>477</td>
<td>429.8</td>
<td>1/2</td>
<td>493</td>
</tr>
<tr>
<td>VBA43A</td>
<td>526</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: When option G (pressure gauge) is selected

**VBAT38S1** Material: Stainless steel 304

Connected to VBA20A, 40A

- Tank OUT port
- Booster regulator IN port
- Drain port
- Tank IN port

![Diagram of VBAT38S1](image)

<table>
<thead>
<tr>
<th>Booster regulator model</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (Rc)</th>
<th>D (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBA20A</td>
<td>531</td>
<td>444</td>
<td>3/8</td>
<td>—</td>
</tr>
<tr>
<td>VBA40A</td>
<td>570</td>
<td>479.8</td>
<td>1/2</td>
<td>—</td>
</tr>
<tr>
<td>VBA22A</td>
<td>494</td>
<td>444</td>
<td>3/4</td>
<td>519</td>
</tr>
<tr>
<td>VBA42A</td>
<td>527</td>
<td>479.8</td>
<td>1/2</td>
<td>543</td>
</tr>
<tr>
<td>VBA43A</td>
<td>576</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: When option G (pressure gauge) is selected

**VBAT20A1-R**

With safety valve

- Tank OUT port
- Booster regulator IN port
- Drain port
- Tank IN port

![Diagram of VBAT20A1-R](image)

<table>
<thead>
<tr>
<th>Tank model</th>
<th>A (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBAT05</td>
<td>60</td>
</tr>
<tr>
<td>VBAT10</td>
<td>130</td>
</tr>
</tbody>
</table>

**VBAT38A1-R**

With safety valve

- Tank OUT port
- Booster regulator IN port
- Drain port
- Tank IN port

![Diagram of VBAT38A1-R](image)

<table>
<thead>
<tr>
<th>Safety valve port</th>
<th>Rc 3/8</th>
</tr>
</thead>
</table>
Dimensions: CE Certified Product

**VBAT05A-Q** **Material: Carbon steel**
Connected to VBA10A, 11A

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.

**VBAT10A-Q** **Material: Carbon steel**
Connected to VBA10A, 11A

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.

**Connected to VBA20A**

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.

**Connected to VBA22A**

* When option G (pressure gauge) is selected
**Series VBAT**

**Dimensions: CE Certified Product**

**VBAT20A-Q [Material: Carbon steel]**

Connected to VBA20A, 40A

- Tank OUT port: 3/4
- Tank IN port: 3/4
- Safety valve port: 3/8
- Spare port: 2 x 1/2
- Drain port: 1/4
- Booster regulator IN port: C
- Booster regulator OUT port: Ø206 4 x Ø13
- Booster regulator EXH: C
- Booster regulator IN port: Ø256 4 x Ø13

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.

**VBAT38A-Q [Material: Carbon steel]**

Connected to VBA20A, 40A

- Tank OUT port: 3/4
- Tank IN port: 3/4
- Safety valve port: 3/8
- Spare port: 2 x 1/2
- Drain port: 1/4
- Booster regulator IN port: C
- Booster regulator OUT port: Ø206 4 x Ø13
- Booster regulator EXH: C
- Booster regulator IN port: Ø256 4 x Ø13

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.

---

**Booster regulator model**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBA20A</td>
<td>481</td>
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<td>520</td>
<td>429.8</td>
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<tr>
<td>VBA42A</td>
<td>477</td>
<td>429.8</td>
<td>1/2</td>
<td>493</td>
</tr>
</tbody>
</table>

Note) When option G (pressure gauge) is selected

---

**Dimensions:**

- Material: Carbon steel
- Dimensions: CE Certified Product
- Series VBAT
- Connected to VBA20A, 40A
- Connected to VBA22A, 42A

---

**Connected to VBA22A, 42A**

- Booster regulator model: A
- Booster regulator IN port: C
- Booster regulator OUT port: Ø206 4 x Ø13
- Booster regulator EXH: C
- Booster regulator IN port: Ø256 4 x Ø13

---

**Material:**

- VBAT20A-Q: Carbon steel
- VBAT38A-Q: Carbon steel

---

**Connected to VBA20A, 40A**

- Tank OUT port: 3/4
- Tank IN port: 3/4
- Safety valve port: 3/8
- Spare port: 2 x 1/2
- Drain port: 1/4
- Booster regulator IN port: C
- Booster regulator OUT port: Ø206 4 x Ø13
- Booster regulator EXH: C
- Booster regulator IN port: Ø256 4 x Ø13

---

**VCAT20A-Q [Material: Carbon steel]**

Connected to VBA20A, 40A

- Tank OUT port: 3/4
- Tank IN port: 3/4
- Safety valve port: 3/8
- Spare port: 2 x 1/2
- Drain port: 1/4
- Booster regulator IN port: C
- Booster regulator OUT port: Ø206 4 x Ø13
- Booster regulator EXH: C
- Booster regulator IN port: Ø256 4 x Ø13

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.

---

**VCAT38A-Q [Material: Carbon steel]**

Connected to VBA20A, 40A

- Tank OUT port: 3/4
- Tank IN port: 3/4
- Safety valve port: 3/8
- Spare port: 2 x 1/2
- Drain port: 1/4
- Booster regulator IN port: C
- Booster regulator OUT port: Ø206 4 x Ø13
- Booster regulator EXH: C
- Booster regulator IN port: Ø256 4 x Ø13

* The length may be longer than the specification if the plugs mounted on the tank are not fit to the end. The length of G thread type is about 6 mm longer due to plug type differences.
**Dimensions: Product Not Applicable to the ASME Standard**

**VBAT05A1-X11 Material: Carbon steel**
Connected to VBA10A, 11A

![Diagram of VBAT05A1-X11](image)

- The length may be longer than the specification if the plugs mounted on the tank are not fit to the end.

**VBAT10A1-X11 Material: Carbon steel**
Connected to VBA10A, 11A

![Diagram of VBAT10A1-X11](image)

- The length may be longer than the specification if the plugs mounted on the tank are not fit to the end.

**Connected to VBA20A**

![Diagram of Connected to VBA20A](image)

- The length may be longer than the specification if the plugs mounted on the tank are not fit to the end.

**Connected to VBA22A**

![Diagram of Connected to VBA22A](image)

- The length may be longer than the specification if the plugs mounted on the tank are not fit to the end.