Air Hydraulic Unit

- **Model CV**
- **Model CK**
- **Model CP/CPB**
- **Model CPC/CQC**
- **Model CB**
- **Model CC**

Hydraulic pressure can be generated easily by using factory air pressure

Wide variety from simple single circuit to multiple circuits unit with non-leak valve.

- **Easily to generate low to high hydraulic pressure.**
  
  Hydraulic pressure can be generated easily by using factory air pressure. Compact and easy set up.

- **Safety**
  
  If a blackout occurs and the air supply is cut off, the air hydraulic unit with a non-leak valve can hold the hydraulic pressure at the current actuator state.

- **Energy-Saving**
  
  Pump activates when the hydraulic pressure is rising. After the hydraulic pressure reaches as specified, air pressure and hydraulic pressure are balanced then pump is stopped.

- **Wide Variations**
  
  Air driven hydraulic pump unit has a wide pressure range from low to high and discharge pressure range.
**Hydraulic Unit**

**Model CV**
- P.1171
- 2.4〜43.5MPa (AB Pump)
- 2.3〜64.7MPa (AC Pump)
- With Solenoid Valve for Electrical Control

**Model CK**
- P.1173
- 3.9〜7.0MPa (AB4000-□ Pump)
- 15.5〜27.0MPa (AB7000-□ Pump)
- With Solenoid Valve for Manual Control (Standard)

**Model CP/CPB**
- P.1177
- 2.5〜30.0MPa (AB Pump)
- With Solenoid Valve for Electrical Control (Standard)

**Model CPC/CQC**
- P.1185
- 2.5〜30.0MPa (AC Pump)
- With Non-Leak Valve

**Pump Unit**

**Model CB**
- P.1189
- 2.4〜43.5MPa (AB Pump)
- 2.5〜30.0MPa (At BCBH connected)

**Model CC**
- P.1191
- 2.3〜64.7MPa (AC Pump)
- 2.5〜30.0MPa (At BCBH connected)

---

**AB/AC Pump**

Discharge pressure and discharge amount of oil is different depending on pump. Please refer to AB pump/AC pump specification for details on operating pneumatic pressure, discharge pressure and discharge flow rate.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Discharge Pressure MPa</th>
<th>Air Consumption Nm³/min</th>
<th>Lift</th>
<th>Noise</th>
<th>Usable Fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AB Pump</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB3000</td>
<td>2.4〜4.3</td>
<td>0.4 Nm³/min</td>
<td>below 0.6m</td>
<td>82〜85dB</td>
<td>General Hydraulic Oil</td>
</tr>
<tr>
<td>AB4000</td>
<td>3.9〜7.0</td>
<td></td>
<td></td>
<td></td>
<td>Water-Glycol Silicon Oil</td>
</tr>
<tr>
<td>AB5000</td>
<td>6.0〜11.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB6000</td>
<td>10.0〜17.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB7000</td>
<td>15.5〜27.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB8000</td>
<td>25.0〜43.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AC Pump</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC3001</td>
<td>2.3〜4.2</td>
<td>1.0 Nm³/min</td>
<td>below 1.0m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC4001</td>
<td>3.6〜6.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC5001</td>
<td>5.8〜10.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC6001</td>
<td>8.9〜16.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC7001</td>
<td>14.4〜26.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC8001</td>
<td>22.6〜41.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC9001</td>
<td>35.3〜64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ※1. Discharge pressure is set when air pressure range is between 0.3〜0.5MPa.
Hydraulic Unit (For Single Action)
Model CV

Features

- Manual Control for Single Action (Solenoid valve option is also available.)
- Without Non-Leak Valve
- One Circuit Control Unit

Model No. Indication

CV 2B4 0 - 0 - HH R -

1 Tank Capacity
2 : 2 ℓ (Actual Amount for Use 1.1 ℓ)\(^{1}\)
5 : 5 ℓ (Actual Amount for Use 3.1 ℓ)

\(^{1}\) : When AC pump is selected, only 5.0 ℓ tank is selectable.

2 Pump Part Number (Pump Pressure Code)

<table>
<thead>
<tr>
<th>B3</th>
<th>AB3000-V</th>
<th>C3</th>
<th>AC3001-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4</td>
<td>AB4000-V</td>
<td>C4</td>
<td>AC4001-V</td>
</tr>
<tr>
<td>B5</td>
<td>AB5000-V</td>
<td>C5</td>
<td>AC5001-V</td>
</tr>
<tr>
<td>B6</td>
<td>AB6000-V</td>
<td>C6</td>
<td>AC6001-V</td>
</tr>
<tr>
<td>B7</td>
<td>AB7000-V</td>
<td>C7</td>
<td>AC7001-V</td>
</tr>
<tr>
<td>B8</td>
<td>AB8000-V</td>
<td>C8</td>
<td>AC8001-V</td>
</tr>
<tr>
<td>C9</td>
<td>AC9001-V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 Design No.

0 : Revision Number

4 Fluid Code

0 : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
S : Silicon Oil
G : Water-Glycol (except AB8000/AC8001/AC9001) (Tank is made of steel)

\(*\) : For fluids other than those described in the fluid code, please contact us.

5 Control Method

HH : Mechanical Selector Valve Option (Standard)
SA : Solenoid Valve Option (DC24V)
1A : Solenoid Valve Option (AC100V)
F : Foot Switch

6 Component Directly Mounted on the Air Supply Side

R : Air Regulator (Standard)
D : With a Filter Regulator (Automatic Drain Option)

7 Unit of Pressure Gauge

Blank : MPa (Standard)
P : PSI
Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CV':B30</th>
<th>CV':B40</th>
<th>CV':B50</th>
<th>CV':B60</th>
<th>CV':B70</th>
<th>CV':B80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AB3000-V</td>
<td>AB4000-V</td>
<td>AB5000-V</td>
<td>AB6000-V</td>
<td>AB7000-V</td>
<td>AB8000-V</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure [MPa]</td>
<td>2.4~4.3</td>
<td>3.9~7.0</td>
<td>6.0~11.0</td>
<td>10.0~17.5</td>
<td>15.5~27.0</td>
<td>25.0~43.5</td>
</tr>
<tr>
<td>Air Consumption [Nm³/min]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Capacity</td>
<td>2.2 ℓ (Actual Amount for Use 1.1 ℓ) / 5.5 ℓ (Actual Amount for Use 3.1 ℓ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 ~ 70 ℃</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Model No.: Fluid Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Please refer to the AB/AC pump performance curve for the calculation formula and the volume of discharge hydraulic pressure (P.1195).

External Dimensions / Circuit Symbol

CV28:□0-□-HHR

CV28:□0-□-HHR: Circuit Symbol

Note:
1. Please contact us for other specifications.

CV5C□0-□-HHR: Circuit Symbol

Note:
1. Please contact us for other specifications.
Hydraulic Unit
(For Double/Single Action)
Model CK

Features
• Manual Control for Double Action/Single Action
• With Non-Leak Valve (Hydraulic pressure is held, even after air supply is cut off.)
• Portable

Model No. Indication

CK 3 B4 1 – NN – 0

1 Tank Capacity
3 : 3 l (Actual Amount for Use 1.4 l )

2 Pump Part Number (Pump Pressure Code)
B4 : AB4000-□
B7 : AB7000-□

4 Circuit Symbol
NN : Double Action 1 Circuit (Mechanical Valve at the Position of 3, 1 Piece)
A : Single Action 1 Circuit (Mechanical Valve at the Position of 2, 1 Piece)
AA : Single Action 2 Circuit (Mechanical Valve at the Position of 2, 2 Pieces)

5 Usable Fluid
0 : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
S : Silicon Oil
G : Water-Glycol
※ For fluids other than those described in the fluid code, please contact us.

3 Design No.
1 : Revision Number

Note:
1. Offering options with handle or with air filter.
   Please contact us for further information. Please note that the handle and air filter as option are not available together.
**Specifications**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CK3B41-1-NN-1</th>
<th>CK3B71-1-NN-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AB4000-1</td>
<td>AB7000-1</td>
</tr>
<tr>
<td>Non-Leak Valve Part Number</td>
<td>BA2011-0</td>
<td>BA5011-0</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure MPa</td>
<td>3.9 ~ 7.0</td>
<td>15.5 ~ 27.0</td>
</tr>
<tr>
<td>Air Consumption Nm³/min</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Tank Capacity L</td>
<td>3.2 (Actual Amount for Use 1.4 L)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature °C</td>
<td>0 ~ 70</td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Model No. : Fluid Code</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Discharge hydraulic pressure indicates when air pressure range is between 0.3 ~ 0.5MPa.
2. Please refer to the AB pump performance curve for the calculation formula and the volume of discharge hydraulic pressure (P.1195).

**External Dimensions / Circuit Symbol : Double Action 1 Circuit CK31-NN-NN**

![Diagram of mechanical valve and circuit symbol]

- **Mechanical Valve**
- **Oil Supply Port**
- **Pressure Gauge** (For Inverting Pressure)
- **Air Bleed Valve**
- **Drain Port** (Rc1/4)
- **Air Regulator**
- **4-M8 x 1.25 Bolt Hole** (Floor Mounting)
- **PA Port** (Rc1/4)
- **Mechanical Valve Detail** (3 Positions)

![Circuit Symbol]

- **Air Operate Valve SMC (VM151-01-35BA)**
- **BA Valve**
- **Pressure Gauge**
- **Air Regulator**
- **Air Pressure Gauge**
- **Drain Port**
- **A/B Port Hydraulic Pressure OFF**
- **A Port Hydraulic Pressure ON**
- **B Port Hydraulic Pressure ON**
Air Hydraulic Unit

Hydraulic Unit (For Double/Single Action)

Cost External Dimensions / Circuit Symbol : Single Action 1 Circuit CK311-A-

Mechanical Valve

Oil Supply Port

4-M8 X 1.25 Bolt Hole
(Floor Mounting)

PA Port
Rc1/4

Air Regulator

Pressure Gauge
(For incoming Pressure)

Air Bleed Valve

A Port
Rc1/4

3 x Tank

Drain Port
(Rc1/4)

4-M8 X 1.25 Bolt Hole
(For Wall Mounting)

Circuit Symbol

Mechanical Valve

SMC (VM132-M5-34BA)

Pressure Gauge

BA Valve

A Port

AB Pump

A Port

Air Regulator

Drain Port
## External Dimensions / Circuit Symbol: Single Action 2 Circuits CK3□1-AA□

### Mechanical Valve

- Oil Supply Port
- A1 Port
  - Rc1/4
- A2 Port
  - Rc1/4
- Pressure Gauge
  - For Incoming Pressure
- Air Bleed Valve
- 3L Tank
- Drain Port (Rc1/4)
- 4-M8 × 1.25 Bolt Hole (For Wall Mounting)

### Circuit Symbol

```
A1 Port
BA Valve

Mechanical Valve
SMC (VM132-M5-34BA)

Pressure Gauge

A8 Pump

Air Pressure Gauge

PA Port

A2 Port

Drain Port
```

---

### Specifications

- **H**: 2.8 ℓ
- **L**: 1.4 ℓ
- **Drain Port**: Rc1/4
- **Tank**: 3 ℓ
- **Port**: A1, A2
- **Bolt Hole**: 4-M8 × 1.25

---

### Rotary Joint

- **JR**

---

### Air Sequence Valve

- **BWD**

---

### Valve / Coupler

- **Hydraulic Non-Leak Coupler**
  - BGA/BGR
  - BGC/GRD
  - BGP/GRS
  - BBP/BBT
  - BNP/BNP
  - BLP/BJS
  - BFP/BFS
- **Auto Coupler**
  - JVA/JVB
  - JVC/JVD
  - JVE/JVF
  - JVA/JVB
  - JNC/JND
  - JLC/JLS

---

### Air Hydraulic Unit

- **CV**
- **CK**
- **CP/CPB**
- **CPC/CQC**
- **CB**
- **CC**
- **AB/AB-V**
- **AC/AC-V**

---

### Model No. Indication

- **High-Power Series**
- **Pneumatic Series**
- **Hydraulic Series**

---

### External Dimensions

- **Size**: 1176
Hydraulic Unit
(For Double/Single Action)
Model CP

Features
- Electrical Control for Double Action/Single Action
- With Non-Leak Valve (Hydraulic pressure is held, even after air supply is cut off.)
- Compact with AB Pump Installed  • Tank Capacity 2 ㎘

Model No. Indication

<table>
<thead>
<tr>
<th>CP</th>
<th>2041</th>
<th>YYY</th>
<th>50</th>
<th>(7.0MPa)</th>
</tr>
</thead>
</table>

1 Tank Capacity
2  : 2 ㎘ (Actual Amount for Use 1.1 ㎘)
※ Please refer to Model CPB for 5 ㎘ Tank.

2 Pump Part Number (Pump Pressure Code)

| 03 | AB3000-□ | 06 | AB6000-□ |
| 04 | AB4000-□ | 07 | AB7000-□ |
| 05 | AB5000-□ | 08 | AB8000-□ |

3 Design No.
1  : Revision Number

4 Circuit Symbol

| NN | Double Solenoid Valve Control for Double Action Circuit |
| YY | Double Solenoid Valve Control for Double Action Circuit (With JBA Pressure Switch) |
| A  | Single Solenoid Valve Control for Single Action Circuit |
| C  | Single Solenoid Valve Control for Single Action Circuit (With JBA Pressure Switch) |
| U  | Double Solenoid Valve Control for Single Action Circuit (With JBA Pressure Switch) |

Entry Example
Double Action One Circuit (with JBA) × 2 → YYY
Single Action One Circuit/Single Solenoid Valve × 2 → AA
※Please contact us for other circuits.

5 Control Voltage
1  : AC100V
2  : AC200V
3  : AC110V
4  : AC220V
5  : DC 24V

6 Fluid Code
0  : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
S  : Silicon Oil
G  : Water-Glycol (Iron Tank)
※ For fluids other than those described in the fluid code, please contact us.

7 Option

Blank  : Standard
H  : With Piping Block
G  : With a Main Pressure Gauge

8 Unit of Pressure Gauge

Blank  : MPa (Standard)
P  : PSI

9 Operating Pressure

Please indicate operating pressure with the unit of measurement.
( Please inform us with proper unit symbols.)

Entry Example
At 5.5MPa → (5.5MPa)
At 25MPa → (25.0MPa)
At 700PSI → (700PSI)
Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CP2031</th>
<th>CP2041</th>
<th>CP2051</th>
<th>CP2061</th>
<th>CP2071</th>
<th>CP2081</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AB3000-○</td>
<td>AB4000-○</td>
<td>AB5000-○</td>
<td>AB6000-○</td>
<td>AB7000-○</td>
<td>AB8000-○</td>
</tr>
<tr>
<td>Non-Leak Valve Part Number</td>
<td>BA2011-0</td>
<td>BA2011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure*1 MPa</td>
<td>2.5 ~ 4.3</td>
<td>3.9 ~ 7.0</td>
<td>6.0 ~ 11.0</td>
<td>10.0 ~ 17.5</td>
<td>15.5 ~ 27.0</td>
<td>25.0 ~ 30.0</td>
</tr>
<tr>
<td>Air Consumption Nm³/min</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Capacity ℓ</td>
<td>2:2 ℓ (Actual Amount for Use 1.1 ℓ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Voltage</td>
<td>Model No. : Control Voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature ℃</td>
<td>0 ~ 70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Model No. : Fluid Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Frequency</td>
<td>Pump Operation Time : less than 500 hours/year (2 hrs/day) ※Actual Discharge Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Switch Part Number (Pressure Increase Detection)</td>
<td>JBA0700-0G</td>
<td>JBA0700-0G</td>
<td>JBA0700-0G</td>
<td>JBA2700-0G</td>
<td>JBA2700-0G</td>
<td>JBA2700-0G</td>
</tr>
<tr>
<td>Air Solenoid Valve</td>
<td>Single Solenoid Valve: VO307-0G / Double Solenoid Valve: SYJ240-0G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suction Filter</td>
<td>JF1030: 174μm (100 mesh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

1. Discharge hydraulic pressure indicates when air pressure range is between 0.3 ~ 0.5MPa.
   For AB8000-○ pump, it indicates when air pressure range is between 0.3 to 0.36MPa due to the max. operating pressure of BA5011-0 valve.
2. Standard setting value of pressure switch should be 70% of the operating pressure.
   1. Please refer to the AB pump performance curve for the calculation formula and the volume of discharge hydraulic pressure (P.1195).
   2. If hydraulic oil having viscosity higher than the shown, activating time increases.
   3. In case of a low ambient temperature, action time increases because of high viscosity of hydraulic oil.
   4. When air contains a large amount of moisture or air supply is located at the end, always equip with an automatic drain air filter.
   5. When the hydraulic circuit is equipped with a pressure gauge, install a damper or use an oil filled (glycerin) pressure gauge to prevent pressure gauge damage due to pressure surging.
   6. Provide enough space at the bottom of the unit to compensate for hydraulic oil change. (Tank cleaning and suction strainer tightening becomes easier.)

Circuit Symbol/Circuit Reference

※Please contact us for other circuits.

<table>
<thead>
<tr>
<th>Circuit Symbol</th>
<th>Circuit (Reference)</th>
<th>Number of Circuits</th>
<th>BA Valve Number of Connection</th>
<th>Air Solenoid Valve</th>
<th>Pressure Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Single Action Actuator Circuit</td>
<td>1</td>
<td>1</td>
<td>Single Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>C</td>
<td>Single Action Actuator Circuit</td>
<td>1</td>
<td>1</td>
<td>Single Solenoid Valve</td>
<td>○</td>
</tr>
<tr>
<td>CC</td>
<td>2</td>
<td>2</td>
<td>Single Solenoid Valve</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>1</td>
<td>1</td>
<td>Double Solenoid Valve</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>UU</td>
<td>2</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>NN</td>
<td>Double Action Actuator Circuit</td>
<td>1</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>YY</td>
<td>1</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>○</td>
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</tr>
<tr>
<td>YYYY</td>
<td>2</td>
<td>4</td>
<td>Double Solenoid Valve</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>
**External Dimensions**

<table>
<thead>
<tr>
<th>BA Valve Number of Connection</th>
<th>1 Connection</th>
<th>2 Connections</th>
<th>3 Connections</th>
<th>4 Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>295</td>
<td>345</td>
<td>395</td>
<td>445</td>
</tr>
<tr>
<td>B</td>
<td>90</td>
<td>140</td>
<td>190</td>
<td>240</td>
</tr>
<tr>
<td>C</td>
<td>359</td>
<td>409</td>
<td>459</td>
<td>510</td>
</tr>
</tbody>
</table>

Note

1. Please contact us for the specification (water-glycol, with option piping block, with source pressure indicator) other than the drawing above.
Hydraulic Unit (For Double/Single Action)  
Model CPB

**Features**

- Electrical Control for Double Action/Single Action
- With Non-Leak Valve (Hydraulic pressure is held, even after air supply is cut off.)
- Compact with AB Pump Installed  
  - Tank Capacity 5 \( \ell \)

**Model No. Indication**

<table>
<thead>
<tr>
<th>C</th>
<th>P</th>
<th>B</th>
<th>4</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>2YY</th>
<th>5</th>
<th>(7.0MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

**1 Tank Capacity**

- \( P \) : 5 \( \ell \) (Actual Amount for Use 3.7 \( \ell \))
  - Please refer to Model CP for 2 \( \ell \) Tank.

**2 Pump Part Number (Pump Pressure Code)**

<table>
<thead>
<tr>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB3000</td>
<td>AB4000</td>
<td>AB5000</td>
<td>AB6000</td>
<td>AB7000</td>
<td>AB8000</td>
</tr>
</tbody>
</table>

**3 Fluid Code**

- \( O \) : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
- \( S \) : Silicon Oil
- \( G \) : Water•Glycol (Iron Tank)
- \( F \) : Fatty Acid Ester
  - For fluids other than those described in the fluid code, please contact us.

**4 Design No.**

- \( 0 \) : Revision Number

**5 Circuit Symbol** (Indicate with the number of circuits and circuit symbol)

- \( NN \) : Double Solenoid Valve Control for Double Action Circuit
- \( YY \) : Double Solenoid Valve Control for Double Action Circuit (With JBA Pressure Switch)
- \( E \) : Single Solenoid Valve Control for Single Action Circuit
- \( G \) : Single Solenoid Valve Control for Single Action Circuit (With JBA Pressure Switch)
- \( U \) : Double Solenoid Valve Control for Single Action Circuit (With JBA Pressure Switch)

**Entry Example**

- Double Action One Circuit (with JBA) \( \times 2 \) → 2YY
- Single Action One Circuit/Single Solenoid Valve \( \times 2 \) → 2E
  - Please contact us for other circuits.

**6 Control Voltage**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC100V</td>
<td>AC200V</td>
<td>AC110V</td>
<td>AC220V</td>
<td>DC 24V</td>
<td></td>
</tr>
</tbody>
</table>

**7 Option**

- \( Blank \) : Standard
- \( C \) : +Common
- \( D \) : Digital Pressure Sensor
- \( E \) : Without Filter Regulator
- \( F \) : Manual-Drain Filter Regulator
- \( G \) : With Primary Pressure Gauge
- \( H \) : With Piping Block on the Left
- \( J \) : With Air Regulator
- \( K0 \) : With Pressure Gauge for Each Circuit (Without Primary Pressure Gauge)
- \( K1 \) : With Color Displayed Pressure Gauge for Each Circuit (Without Primary Pressure Gauge)
- \( KG0 \) : With Pressure Gauge for Each Circuit (With Primary Pressure Gauge)
- \( KG1 \) : With Color Displayed Pressure Gauge for Each Circuit (With Primary Pressure Gauge)
- \( L \) : With Pressure Switch Light
- \( N \) : Piping Port NPT Thread, Pressure Gauge in both PSI/MPa
- \( P \) : Pressure Gauge in both PSI/MPa
- \( Q0 \) : With Oil Level Switch (ON when Oil Level Drops)
- \( Q1 \) : With Oil Level Switch (OFF when Oil Level Drops)
- \( T \) : Iron Tank

**8 Operating Pressure**

Please indicate operating pressure with the unit of measurement.
(Please inform us with proper unit symbols.)

<table>
<thead>
<tr>
<th>Entry Example</th>
<th>At 5.5MPa</th>
<th>(5.5MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 25MPa</td>
<td>(25.0MPa)</td>
<td></td>
</tr>
<tr>
<td>At 700Psi</td>
<td>(700PSI)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

1. When selecting \( J \) Option \( N \) : Piping Port NPT Thread, dimensions in the specification sheet and other documents are in inches.
2. Please contact us for specifications and external dimensions for options.
### Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CPB30~0</th>
<th>CPB40~0</th>
<th>CPB50~0</th>
<th>CPB60~0</th>
<th>CPB70~0</th>
<th>CPB80~0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AB3000~</td>
<td>AB4000~</td>
<td>AB5000~</td>
<td>AB6000~</td>
<td>AB7000~</td>
<td>AB8000~</td>
</tr>
<tr>
<td>Non-Leak Valve Part Number</td>
<td>BA2011-0</td>
<td>BA2011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure</td>
<td>2.5~4.3</td>
<td>3.9~7.0</td>
<td>6.0~11.0</td>
<td>10.0~15.0</td>
<td>15.5~25.0</td>
<td>25.0~30.0</td>
</tr>
<tr>
<td>Air Consumption</td>
<td>0.4 Nm³/min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Capacity</td>
<td>7.5 L (Actual Amount for Use 3.7 L)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Voltage</td>
<td>Model No. : Control Voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 ~ 70 °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Model No. : Fluid Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Operation Frequency**
- Pump Operation Time : less than 500 hours/year (2 hrs/day) Actual Discharge Time
- Pressure Switch Part Number (Pressure Increase Detection) [1][2]
  - JBA0700-0G
  - JBA0700-0G
  - JBA0700-0G
  - JBA2700-0G
  - JBA2700-0G

**Air Solenoid Valve**
- Single Solenoid Valve: SY13140~0G
- Double Solenoid Valve: SY13240~0G

**Suction Filter**
- JF1030-174μm (100 mesh)

**Notes:**
1. Discharge hydraulic pressure indicates when air pressure range is between 0.3 ~ 0.5MPa. For AB8000~ pump, it indicates when air pressure range is between 0.3 to 0.36MPa due to the max operating pressure of BA5011-0 valve.
2. Standard setting value of pressure switch should be 70% of the operating pressure.
3. Please refer to the AB pump performance curve for the calculation formula and the volume of discharge hydraulic pressure (P.1195).
4. If hydraulic oil has viscosity higher than the shown, activating time increases.
5. In case of a low ambient temperature, action time increases because of high viscosity of hydraulic oil.
6. When the hydraulic circuit is equipped with a pressure gauge, install a damper or use an oil filled (glycerin) pressure gauge to prevent pressure gauge damage due to pressure surging.
7. Provide enough space at the bottom of the unit to compensate for hydraulic oil change. (Tank cleaning and suction strainer tightening becomes easier.)

### Circuit Symbol/Circuit Reference
- Please contact us for other circuits.

<table>
<thead>
<tr>
<th>Circuit Symbol</th>
<th>Circuit (Reference)</th>
<th>Number of Circuits</th>
<th>BA Valve Number of Connection</th>
<th>Air Solenoid Valve</th>
<th>Pressure Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Single Action</td>
<td>1</td>
<td>1</td>
<td>Single Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>G</td>
<td>Actuator Circuit</td>
<td>1</td>
<td>1</td>
<td>Single Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>2G</td>
<td></td>
<td>2</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>U</td>
<td></td>
<td>1</td>
<td>1</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>2U</td>
<td></td>
<td>2</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>NN</td>
<td>Double Action</td>
<td>1</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>YY</td>
<td>Actuator Circuit</td>
<td>2</td>
<td>4</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
</tbody>
</table>

### Diagrams
- **E** Single Action 1 Circuit
- **G** Single Action 1 Circuit (With Pressure Switch)
- **UU** Single Action 2 Circuit (With Pressure Switch)
- **NN** Double Action 1 Circuit
- **YY** Double Action 1 Circuit (With Pressure Switch)
**External Dimensions**

<table>
<thead>
<tr>
<th>BA Valve Number of Connection</th>
<th>1 Connection</th>
<th>2 Connections</th>
<th>3 Connections</th>
<th>4 Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>259</td>
<td>209</td>
<td>159</td>
<td>109</td>
</tr>
</tbody>
</table>

**Notes:**

1. Please contact us for specifications and external dimensions for options.
2. The external dimensions for five or more circuits are different. Please contact us for further information.
| MEMO |

<table>
<thead>
<tr>
<th>Air Hydraulic Unit</th>
<th>Model No. Indication</th>
<th>Specifications</th>
<th>Circuit Symbol</th>
<th>External Dimensions</th>
</tr>
</thead>
</table>

**High-Power Series**
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler
- Hydraulic Unit
- Manual Operation
- Accessories
- Caution / Others

- Air Sequence Valve
  - BWD
- Hydraulic Non-Leak Coupler
  - BGA/RGB
  - BGC/RGD
  - BGP/BGS
  - BPP/BBS
  - BNP/BNS
  - BPP/BJS
  - BPP/BFS
- Auto Coupler
  - JVA/JVB
  - JVC/JSYD
  - JVE/JVF
  - JNA/JNB
  - JNC/JND
  - JLP/JLS
- Rotary Joint
  - JR
- Hydraulic Valve
  - BK
  - BEQ
  - BT
  - BLS/BLG
  - BLB
  - JSS/J5
  - JKA/JKB
  - BMA/BMG
  - AU/AU-M
  - BU
  - BP/JPB
  - BX
  - BEP/BSP
  - BH
  - BC

**Air Hydraulic Unit**
- CV
- CK
- CP/CFB
- CPC/CQC
- CB
- CC
- AB/AB-V
- AC/AC-V
Hydraulic Unit (For Double/Single Action)  
Model CPC/CQC

Features
• Electrical Control for Double Action/Single Action
• With Non-Leak Valve (Hydraulic pressure is held, even after air supply is cut off.)
• The CPC/CQC unit is a hydraulic unit equipped with AC pump used in a system requiring a flow rate higher than that of CP/CPB unit.

Model No. Indication

CPC 4000 - 2YY - 5 - (7.0MPa)

1 Tank Capacity
- P : 5 ℓ (Actual Amount for Use 3.7 ℓ)
- Q : 10 ℓ (Actual Amount for Use 7 ℓ) (Iron Tank)

2 Pump Part Number (Pump Pressure Code)
- 3 : AB3000
- 4 : AB4000
- 5 : AB5000
- 6 : AB6000
- 7 : AB7000
- 8 : AB8000

3 Fluid Code
- 0 : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
- S : Silicon Oil
- G : Water-Glycol (Iron Tank)
- F : Fatty Acid Ester

4 Design No.
- 0 : Revision Number

5 Circuit Symbol (Indicate with the number of circuits and circuit symbol)
- NN : Double Solenoid Valve Control for Double Action Circuit
- YY : Double Solenoid Valve Control for Double Action Circuit (With JBA Pressure Switch)
- E : Single Solenoid Valve Control for Single Action Circuit
- G : Single Solenoid Valve Control for Single Action Circuit (With JBA Pressure Switch)
- U : Double Solenoid Valve Control for Single Action Circuit (With JBA Pressure Switch)

Entry Example
Double Action One Circuit (with JBA) × 2 → 2YY
Single Action One Circuit/Single Solenoid Valve × 2 → 2E

6 Control Voltage
- 1 : AC100V
- 2 : AC200V
- 3 : AC110V
- 4 : AC220V
- 5 : DC 24V

7 Option
- Blank : Standard
- C : +Common
- D : Digital Pressure Sensor
- E : Without Filter Regulator
- F : Manual-Drain Filter Regulator
- G : With Primary Pressure Gauge
- H : With Piping Block on the Left
- J : With Air Regulator
- K0 : With Pressure Gauge for Each Circuit (Without Primary Pressure Gauge)
- K1 : With Color Displayed Pressure Gauge for Each Circuit (Without Primary Pressure Gauge)
- KG0 : With Pressure Gauge for Each Circuit (With Primary Pressure Gauge)
- KG1 : With Color Displayed Pressure Gauge for Each Circuit (With Primary Pressure Gauge)
- L : With Pressure Switch Light
- N : Piping Port NPT Thread, Pressure Gauge in both PSI/MPa
- P : Pressure Gauge in both PSI/MPa
- Q0 : With Oil Level Switch (ON when Oil Level Drops)
- Q1 : With Oil Level Switch (OFF when Oil Level Drops)
- T : Iron Tank (Only for CPC)

8 Operating Pressure

Please indicate operating pressure with the unit of measurement. (Please inform us with proper unit symbols.)

Entry Example
- At 5.5MPa → (5.5MPa)
- At 25MPa → (25.0MPa)
- At 700PSI → (700PSI)
Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>C: C30.0</th>
<th>C: C40.0</th>
<th>C: C50.0</th>
<th>C: C60.0</th>
<th>C: C70.0</th>
<th>C: C80.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AC3001-1</td>
<td>AC4001-1</td>
<td>AC5001-1</td>
<td>AC6001-1</td>
<td>AC7001-1</td>
<td>AC8001-1</td>
</tr>
<tr>
<td>Non-Leak Valve Part Number</td>
<td>BA2011-0</td>
<td>BA2011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
<td>BA5011-0</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure MPa</td>
<td>2.5~4.2</td>
<td>3.6~6.6</td>
<td>5.8~10.6</td>
<td>8.9~13.3</td>
<td>14.4~26.4</td>
<td>22.6~30.0</td>
</tr>
<tr>
<td>Air Consumption Nm³/min</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Capacity L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Voltage Model No.: Control Voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature °C</td>
<td>0 ~ 70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid Model No.: Fluid Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Frequency Pump Operation Time : less than 500 hours/year (2 hrs/day) Actual Discharge Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Pressure Switch Part Number (Pressure Increase Detection) | JBA0700-0G | JBA0700-0G | JBA0700-0G | JBA2700-0G | JBA2700-0G | JBA2700-0G |

| Air Solenoid Valve | Single Solenoid Valve: SY33140-1G / Double Solenoid Valve: SY33240-1G |

| Suction Filter | JF1030:174µm (100 mesh) |

Notes:
1. Discharge hydraulic pressure indicates when air pressure range is between 0.3 ~ 0.5MPa.
2. Standard setting value of pressure switch should be 70% of the operating pressure.
3. If hydraulic oil has viscosity higher than the shown, activating time increases.
4. When the hydraulic circuit is equipped with a pressure gauge, install a damper or use an oil filled (glycerin) pressure gauge to prevent pressure gauge damage due to pressure surging.
5. Provide enough space at the bottom of the unit to compensate for hydraulic oil change. (Tank cleaning and suction strainer thickening becomes easier.)

Circuit Symbol/Circuit Reference

<table>
<thead>
<tr>
<th>Circuit Symbol</th>
<th>Circuit (Reference)</th>
<th>Number of Circuits</th>
<th>BA Valve Number of Connection</th>
<th>Air Solenoid Valve</th>
<th>Pressure Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Single Action Actuator Circuit</td>
<td>1</td>
<td>1</td>
<td>Single Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>G</td>
<td>Single Action Actuator Circuit (With Pressure Switch)</td>
<td>1</td>
<td>1</td>
<td>Single Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>2G</td>
<td></td>
<td>2</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>U</td>
<td></td>
<td>1</td>
<td>1</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>2U</td>
<td></td>
<td>2</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>NN</td>
<td>Double Action Actuator Circuit</td>
<td>1</td>
<td>2</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
<tr>
<td>YY</td>
<td></td>
<td>2</td>
<td>4</td>
<td>Double Solenoid Valve</td>
<td>—</td>
</tr>
</tbody>
</table>

Air Hydraulic Unit

CV
CK
CP/CPB
CPC/COC
CH
CC
AB/AB-V
AC/AC-V
**External Dimensions : CPC**

<table>
<thead>
<tr>
<th>BA Valve Number of Connection</th>
<th>1 Connection</th>
<th>2 Connections</th>
<th>3 Connections</th>
<th>4 Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>259</td>
<td>209</td>
<td>159</td>
<td>109</td>
</tr>
</tbody>
</table>

Notes:
1. Please contact us for specifications and external dimensions for options.
2. The external dimensions for five or more circuits are different. Please contact us for further information.
### External Dimensions : CQC

![Diagram of the CQC model with dimensions and components labeled]

<table>
<thead>
<tr>
<th>BA Valve Number of Connection</th>
<th>1 Connection</th>
<th>2 Connections</th>
<th>3 Connections</th>
<th>4 Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>345.5</td>
<td>295.5</td>
<td>245.5</td>
<td>195.5</td>
</tr>
</tbody>
</table>

**Notes:**

1. Please contact us for specifications and external dimensions for options.
2. The external dimensions for five or more circuits are different. Please contact us for further information.
Pump Unit
(For Double/Single Action)
Model CB

Features
- Pump Unit to use in conjunction with BC / BH Unit
- Compact with AB Pump Installed
※ Please refer to P.1165, P.1167 for BC/BH non-leak unit.

Model No. Indication

CB 2040 - 0 -

1 Tank Capacity

2 : 2 ℓ (Actual Amount for Use 1.1 ℓ )
5 : 5 ℓ (Actual Amount for Use 3.1 ℓ )

2 Pump Part Number (Pump Pressure Code)

03 : AB3000-□
04 : AB4000-□
05 : AB5000-□
06 : AB6000-□
07 : AB7000-□
08 : AB8000-□

3 Design No.

0 : Revision Number

4 Fluid Code

0 : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
S : Silicon Oil
G : Water-Glycol (except AB8000) (Tank is made of steel.)
※ For fluids other than those described in the fluid code, please contact us.

5 Option

Blank : Standard (Air Regulator)
D : With Filter Regulator (Automatic Drain Option)
Q : With Level Switch

6 Unit of Pressure Gauge

Blank : MPa (Standard)
P : PSI
## Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CB-030</th>
<th>CB-040</th>
<th>CB-050</th>
<th>CB-060</th>
<th>CB-070</th>
<th>CB-080</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AB3000</td>
<td>AB4000</td>
<td>AB5000</td>
<td>AB6000</td>
<td>AB7000</td>
<td>AB8000</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure MPa</td>
<td>2.4~4.3</td>
<td>3.9~7.0</td>
<td>6.0~11.0</td>
<td>10.0~17.5</td>
<td>15.5~27.0</td>
<td>25.0~43.5</td>
</tr>
<tr>
<td>Air Consumption Nm³/min</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Capacity ℓ</td>
<td>2:2.8 (Actual Amount for Use 1.1ℓ) / 5:5.6 (Actual Amount for Use 3.1ℓ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature ˚C</td>
<td>0 ~ 70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Model No.: Fluid Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Frequency</td>
<td>Pump Operation Time : less than 500 hours/year (2 hrs/day)  ※ Actual Discharge Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Discharge hydraulic pressure indicates when air pressure range is between 0.3 ~ 0.5MPa.
2. Please be careful of the operating pressure range of BH / BC unit to be used in combination.
   - Example: In case of using CB-080 and BH0071 together, actual operating pressure range is 25 to 30MPa.
   - CB-080 range = 25 to 43.5MPa, BH0071 range = 6 to 30MPa.
3. Please refer to the AB pump performance curve for the calculation formula and the volume of discharge hydraulic pressure (P.1195).

## Circuit Symbol

- Pv Port
- R Port
- Px Port

## Application Example

A manual operation of double action cylinder in combination with BH (NN circuit).

## External Dimensions

※This drawing is for 2 liter tank.

- 4-M8 Bolt hole
- 4-M8 x 1.25 x 16 Bolt With Spring Washer (Included)

Note:
1. Please contact us for the specification (5.0 ℓ tank, water-glycol, with filter regulator, level switch etc.) other than the drawing above.
Pump Unit
(For Double/Single Action)
Model CC

Features
- Pump Unit to use in conjunction with BC / BH Unit
- This unit is a hydraulic unit equipped with AC pump used in a system requiring a flow rate higher than that of CB unit.
※Please refer to P.1165, P.1167 for BC/BH non-leak valve unit.

Model No. Indication

1 Tank Capacity
5 : 5ℓ (Actual Amount for Use 3.1ℓ)

2 Pump Part Number (Pump Pressure Code)
03 : AC3001-□
04 : AC4001-□
05 : AC5001-□
06 : AC6001-□
07 : AC7001-□
08 : AC8001-□
09 : AC9001-□

3 Design No.
0 : Revision Number

4 Fluid Code
0 : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
S : Silicon Oil
G : Water-Glycol (except AC8001/AC9001) (Tank is made of steel.)
※For fluids other than those described in the fluid code, please contact us.

5 Option
Blank : Standard (Air Regulator)
D : With Filter Regulator (Automatic Drain Option)
Q : With Level Switch

6 Unit of Pressure Gauge
Blank : MPa (Standard)
P : PSI
## Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CC5030</th>
<th>CC5040</th>
<th>CC5050</th>
<th>CC5060</th>
<th>CC5070</th>
<th>CC5080</th>
<th>CC5090</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Part Number</td>
<td>AC3001</td>
<td>AC4001</td>
<td>AC5001</td>
<td>AC5001</td>
<td>AC6001</td>
<td>AC7001</td>
<td>AC8001</td>
</tr>
<tr>
<td>Discharge Hydraulic Pressure (MPa)</td>
<td>2.3～4.2</td>
<td>3.6～6.6</td>
<td>5.8～10.6</td>
<td>8.9～16.3</td>
<td>14.4～26.4</td>
<td>22.6～41.4</td>
<td>35.3～64.7</td>
</tr>
<tr>
<td>Air Consumption (Nm³/min)</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Capacity (l)</td>
<td>5 (Actual Amount for Use 3.1 l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature (°C)</td>
<td>0～70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Model No. : Fluid Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Frequency</td>
<td>Pump Operation Time : less than 500 hours/year (2 hrs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Discharge hydraulic pressure indicates when air pressure range is between 0.3～0.5MPa.
2. Please be careful of the operating pressure range of BH / BC unit to be used in combination.
3. Example: In case of using CC5080 and BH0071 together, actual operating pressure range is 22.6 to 30MPa.
4. CC5080 range = 22.6 to 41.4MPa, BH0071 range = 6 to 30MPa.
5. Please refer to the AB pump performance curve for the calculation formula and the volume of discharge hydraulic pressure (P.1195).

## Circuit Symbol

A manual operation of double action cylinder in combination with BH (NN circuit).

## External Dimensions

- [Image of dimensions diagram]

### Pump Code
<table>
<thead>
<tr>
<th>Pump Code</th>
<th>AC3001/AC4001</th>
<th>AC5001～AC9001</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Rc3/8</td>
<td>Rc1/2 Thread</td>
</tr>
</tbody>
</table>

Note:
1. Please contact us for the specification (water-glycol, with filter regulator, level switch etc.) other than the drawing above.
AB Pump / AC Pump
(Air Driven Hydraulic Pump)
Model AB/AC

Features
• Air-driven hydraulic pump to generate high-pressure hydraulic-low pressure simply by supplying compressed air.
• Variation of total 13 different sizes and flow rates.
• Applicable to explosion proof specification because no electric motor is used.

Model No. Indication

AB 700 0 - 0

1 Pump Size
AB : AB Pump (Compact Design, Air Consumption 0.4 Nm³/min)
AC : AC Pump (High Volume of Flow, Air Consumption 1.0 Nm³/min)

2 Pressure Range  ※Discharge hydraulic pressure indicates when air pressure range is between 0.3 ~ 0.5MPa.

<table>
<thead>
<tr>
<th>Pressure Range</th>
<th>AB Pump</th>
<th>AC Pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>2.4~4.3MPa</td>
<td>2.3~4.2MPa</td>
</tr>
<tr>
<td>400</td>
<td>3.9~7.0MPa</td>
<td>3.6~6.6MPa</td>
</tr>
<tr>
<td>500</td>
<td>6.0~11.0MPa</td>
<td>5.8~10.6MPa</td>
</tr>
<tr>
<td>600</td>
<td>10.0~17.5MPa</td>
<td>8.9~16.3MPa</td>
</tr>
<tr>
<td>700</td>
<td>15.5~27.0MPa</td>
<td>14.4~26.4MPa</td>
</tr>
<tr>
<td>800</td>
<td>25.0~43.5MPa</td>
<td>22.6~41.4MPa</td>
</tr>
<tr>
<td>900</td>
<td>No AB Pump at this range.</td>
<td>With AC Pump: 35.3~64.7MPa</td>
</tr>
</tbody>
</table>

3 Design No.  Revision Number
0 : When AB pump is selected
1 : When AC pump is selected

4 Circuit Symbol
Blank : Standard
V : Valve Built-In Option

5 Usable Fluid
0 : General Hydraulic Oil (See Hydraulic Fluid List P.1237)
S : Silicon Oil
G : Water-Glycol
※ For fluids other than those described in the fluid code, please contact us.
Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>AB3000-□</th>
<th>AB4000-□</th>
<th>AB5000-□</th>
<th>AB6000-□</th>
<th>AB7000-□</th>
<th>AB8000-□</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Hydraulic Pressure [1] MPa</td>
<td>2.4～4.3</td>
<td>3.9～7.0</td>
<td>6.0～11.0</td>
<td>10.0～17.5</td>
<td>15.5～27.0</td>
<td>25.0～43.5</td>
</tr>
<tr>
<td>Air Consumption Nm³/min</td>
<td></td>
<td></td>
<td></td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Air Pressure Range MPa</td>
<td></td>
<td></td>
<td></td>
<td>0.15～0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lift m</td>
<td></td>
<td></td>
<td></td>
<td>below 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise dB</td>
<td></td>
<td></td>
<td></td>
<td>82～85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable Suction Filter [3]</td>
<td></td>
<td></td>
<td></td>
<td>JF1030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass kg</td>
<td></td>
<td></td>
<td></td>
<td>2.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model No. | AC3001-□ | AC4001-□ | AC5001-□ | AC6001-□ | AC7001-□ | AC8001-□ | AC9001-□ |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Hydraulic Pressure [1] MPa</td>
<td>2.3～4.2</td>
<td>3.6～6.6</td>
<td>5.8～10.6</td>
<td>8.9～16.3</td>
<td>14.4～26.4</td>
<td>22.6～41.4</td>
<td>35.3～64.7</td>
</tr>
<tr>
<td>Air Consumption Nm³/min</td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Air Pressure Range MPa</td>
<td></td>
<td></td>
<td></td>
<td>0.15～0.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lift m</td>
<td></td>
<td></td>
<td></td>
<td>below 1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise dB</td>
<td></td>
<td></td>
<td></td>
<td>82～85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable Suction Filter [3]</td>
<td></td>
<td></td>
<td></td>
<td>JF1040</td>
<td>JF1030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass kg</td>
<td></td>
<td></td>
<td></td>
<td>8.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
[1]. Discharge hydraulic pressure indicates when air pressure range is between 0.3～0.5MPa.
[2]. For fluids other than those described in the fluid code, please contact us.
[3]. Suction filter and suction pipe is not attached. If it is needed, please prepare separately.

Circuit Symbol

膀口：Standard  膀口：Valve Built-In Option

Action Description

Actions ① through ④ are repeated to discharge oil.
When "Air Pressure × Piston Area" balances with "Hydraulic Pressure × Plunger Area", the piston stops automatically.

①Initial Position ②Discharge Process ③Air Supply Switching ④Suction Process (Air Vent)
### Performance Curve

**AB3000**  
Discharge Pressure: $\Phi H = 9.4 (\text{Pa} - 0.04)$

- **AB4000**  
Discharge Pressure: $\Phi H = 15 (\text{Pa} - 0.04)$

- **AB5000**  
Discharge Pressure: $\Phi H = 24 (\text{Pa} - 0.04)$

**AB6000**  
Discharge Pressure: $\Phi H = 38 (\text{Pa} - 0.04)$

- **AB7000**  
Discharge Pressure: $\Phi H = 59 (\text{Pa} - 0.04)$

- **AB8000**  
Discharge Pressure: $\Phi H = 95 (\text{Pa} - 0.04)$

**AC3001**  
Discharge Pressure: $\Phi H = 9.5 (\text{Pa} - 0.06)$

- **AC4001**  
Discharge Pressure: $\Phi H = 15 (\text{Pa} - 0.06)$

- **AC5001**  
Discharge Pressure: $\Phi H = 24 (\text{Pa} - 0.06)$

**AC6001**  
Discharge Pressure: $\Phi H = 37 (\text{Pa} - 0.06)$

- **AC7001**  
Discharge Pressure: $\Phi H = 60 (\text{Pa} - 0.06)$

- **AC8001**  
Discharge Pressure: $\Phi H = 94 (\text{Pa} - 0.06)$

**AC9001**  
Discharge Pressure: $\Phi H = 147 (\text{Pa} - 0.06)$

---

### Pump Performance Curve

- **How to calculate necessary air supply pressure for the set discharge pressure**
  - This can be determined by drawing a line from the discharge pressure $\Phi H$ through $0.1$ MPa.
  - **Example:** Air pressure necessary for oil discharge pressure of $7$ MPa is obtained about $0.1$ MPa.

- **How to calculate discharge pressure from the air pressure**
  - Discharge pressure $\Phi H$ can be calculated by putting the air pressure $PA$ into the formula.
  - **Example:** Discharge pressure is about $7$ MPa when air pressure is $0.51$ MPa.

- **How to calculate oil discharge volume**
  - You can determine the amount of oil discharged from the discharge pressure $\Phi H$.
  - **Example:** At air pressure $0.5$ MPa with no load, discharge oil volume is about $4.6$ l/min. When the pump running load is $3$ MPa, the discharge oil volume is about $3.3$ l/min.

\[ \Phi H \]  
Discharge Pressure (MPa)  
\[ PA \]  
Air Pressure (MPa)
External Dimensions

Machining Dimensions of Mounting Hole (Common)

Hydraulic Oil Discharge Direction

Some parts of AC pump appearance is different from this drawing.

Caution (AB/AC)

1. When using an air circuit on the incoming side of the pump, please make sure to install the air filter and regulator. It can cause a malfunction due to dust in the piping.
2. Always use a suction filter at the pump suction side.
   If you are not using Kosmek filter, we recommended using 100 or more mesh.
3. Use a pipe having no rust or scale internally as a suction pipe. Remove burrs from thread part sufficiently.
   When installing apply a seal material such as seal tape to prevent air from entering.
4. AB/AC pump is not suitable for continuous operation (circulation or open circuit). Always use in a closed circuit.
   Continuous operation results in packing wear, adversely affecting the pump life.
5. When installing a purchased hydraulic valve in the hydraulic circuit, the pump may not balance to stop due to internal leakage of the valve.
   Continuous operation reduces the pump life. Use a non-leak valve and control valve made by Kosmek.
6. The pump discharges oil in pulses. An accumulator can be installed to reduce pulsations.

Accessories (Suction Filter)

Model No. Indication

J F 103 0

Design No. (Revision Number)

Model No.

JF1030

JF1040

Applicable Pump
Part Number

AC5001
AC6001
AC7001
AC8001
AC9001
AC4001

Air Hydraulic Unit

Digist P.1169
Cautions

Installation Notes (For Hydraulic Series)

1) Check the Usable Fluid
   ● Please use the appropriate fluid by referring to the Hydraulic Fluid List.

2) Procedure before Piping
   ● The pipeline, piping connector and fixture circuits should be cleaned by thorough flushing.
   ● The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
   ● There is no filter provided with Kosmek's product except for a part of valves which prevents foreign materials and contaminants from getting into the circuit.

3) Applying Sealing Tape
   ● Wrap with tape 1 to 2 times following the screw direction.
   ● Pieces of the sealing tape can lead to oil leakage and malfunction.
   ● In order to prevent a foreign substance from going into the product during the piping work, it should be carefully cleaned before working.

4) Air Bleeding of the Hydraulic Circuit
   ● If the hydraulic circuit has excessive air, the action time may become very long. If air enters the circuit after connecting the hydraulic port or under the condition of no air in the oil tank, please perform the following steps.

   ① Reduce hydraulic pressure to less than 2MPa.
   ② Loosen the cap nut of pipe fitting closest to the clamp by one full turn.
   ③ Wiggle the pipeline to loosen the outlet of pipe fitting.
   Hydraulic fluid mixed with air comes out.

   ④ Tighten the cap nut after bleeding.
   ⑤ It is more effective to bleed air at the highest point inside the circuit or at the end of the circuit.
   (Set an air bleeding valve at the highest point inside the circuit.)

5) Checking Looseness and Retightening
   ● At the beginning of the machine installation, the bolt and nut may be tightened lightly. Check the looseness and re-tighten as required.

Hydraulic Fluid List

<table>
<thead>
<tr>
<th>Maker</th>
<th>Anti-Wear Hydraulic Oil</th>
<th>Multi-Purpose Hydraulic Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Showa Shell Sekiyu</td>
<td>Tellus S2 M 32</td>
<td>Morina S2 B 32</td>
</tr>
<tr>
<td>Idemitsu Kosan</td>
<td>Daphne Hydraulic Fluid 32</td>
<td>Daphne Super Multi Oil 32</td>
</tr>
<tr>
<td>JX Nippon Oil &amp; Energy</td>
<td>Super Hyrando 32</td>
<td>Super Mulpus DX 32</td>
</tr>
<tr>
<td>Cosmo Oil</td>
<td>Cosmo Hydro AW32</td>
<td>Cosmo New Mighty Super 32</td>
</tr>
<tr>
<td>Exxom Mobil</td>
<td>Mobil DTE 24</td>
<td>Mobil DTE 24 Light</td>
</tr>
<tr>
<td>Matsumura Oil</td>
<td>Hidrol AW-32</td>
<td></td>
</tr>
<tr>
<td>Castrol</td>
<td>Hyspin AWS 32</td>
<td></td>
</tr>
</tbody>
</table>

Note: As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.
Notes on Hydraulic Cylinder Speed Control Unit

Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

Flow Control Circuit for Single Acting Cylinder
For spring return single acting cylinders, restricting flow during release can extremely slow down or disrupt release action. The preferred method is to control the flow during the lock action using a valve that has free-flow in the release direction. It is also preferred to provide a flow control valve at each actuator.

Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow. (Please add flow control to release flow if the lever weight is put on at the time of release action when using swing clamps.)

Flow Control Circuit for Double Acting Cylinder
Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system. However, in the case of controlling LKE, TMA, TLA, both lock side and release side should be meter-in circuit. Refer to P.75 for speed adjustment of LKE. For TMA and TLA, if meter-out circuit is used, abnormal high pressure is created, which causes oil leakage and damage.

- [Meter-out Circuit] (Except LKE/TMA/TLA)

- [Meter-in Circuit] (LKE/TMA/TLA must be controlled with meter-in.)

In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

1. Single acting components should not be used in the same flow control circuit as the double acting components. The release action of the single acting cylinders may become erratic or very slow.

Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

- Separate the control circuit.

- Reduce the influence of double acting cylinder control unit. However, due to the back pressure in tank line, single action cylinder is activated after double action cylinder works.

- In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve or pressure switches for clamping detection. If the back pressure is more than the set pressure then the system will not work as it is designed to.
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
   • The hydraulic machine and air compressor should be handled and maintained by qualified personnel.
2) Do not handle or remove the machine unless the safety protocols are ensured.
   ① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
   ② Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
   ③ After stopping the machine, do not remove until the temperature cools down.
   ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
3) Do not touch clamp (cylinder) while clamp (cylinder) is working. Otherwise, your hands may be injured due to clinching.
4) Do not disassemble or modify.
   • If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance and Inspection

1) Removal of the Machine and Shut-off of Pressure Source
   • Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
   • Make sure there is no abnormality in the bolts and respective parts before restarting.
2) Regularly clean the area around the piston rod and plunger.
   • If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage and air leaks.
3) Please clean out the reference surface regularly (taper reference surface and seating surface) of locating machine. (VS/VT/VFL/VFM/VFJ/VFK/VWS/VWM/VWK/VX/VXF)
   • Location products, except VX/VXF model, can remove contaminants with cleaning functions.
     When installing pallets makes sure there is no thick sludge like substances on pallets.
   • Continuous use with dirt on components will lead to locating functions not work properly, leaking and malfunction.
4) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.
5) Regularly tighten nuts, bolts, pins, cylinders and pipe line to ensure proper use.
6) Make sure the hydraulic fluid has not deteriorated.
7) Make sure there is smooth action and no abnormal noise.
   • Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
8) The products should be stored in the cool and dark place without direct sunshine or moisture.
9) Please contact us for overhaul and repair.
● Warranty

1) Warranty Period
● The product warranty period is 18 months from shipment from
our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope
● If the product is damaged or malfunctions during the warranty
period due to faulty design, materials or workmanship, we will
replace or repair the defective part at our expense.
   Defects or failures caused by the following are not covered.

   ① If the stipulated maintenance and inspection are not carried out.
   ② If the product is used while it is not suitable for use based on
the operator’s judgment, resulting in defect.
   ③ If it is used or handled in an inappropriate way by the operator.
      (Including damage caused by the misconduct of the third party.)
   ④ If the defect is caused by reasons other than our responsibility.
   ⑤ If repair or modifications are carried out by anyone other than Kosmek,
      or without our approval and confirmation, it will void warranty.
   ⑥ Other caused by natural disasters or calamities not attributable to
      our company.
   ⑦ Parts or replacement expenses due to parts consumption and
deterioration.
      (Such as rubber, plastic, seal material and some electric components.)

   Damages excluding from direct result of a product defect shall be
excluded from the warranty.
# Sales Offices

## Sales Offices across the World

<table>
<thead>
<tr>
<th>Country</th>
<th>Office Type</th>
<th>TEL.</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>Overseas Sales</td>
<td>+81-78-991-5162</td>
<td>+81-78-991-8787</td>
</tr>
<tr>
<td>USA</td>
<td>KOSMEK (USA) LTD.</td>
<td>+1-630-620-7650</td>
<td>+1-630-620-9015</td>
</tr>
<tr>
<td>Mexico</td>
<td>KOSMEK USA Mexico Office</td>
<td>+52-442-161-2347</td>
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<tr>
<td>Europe</td>
<td>KOSMEK EUROPE GmbH</td>
<td>+43-463-287587</td>
<td>+43-463-287587-20</td>
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<tr>
<td>China</td>
<td>KOSMEK (CHINA) LTD.</td>
<td>+86-21-54253000</td>
<td>+86-21-54253709</td>
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<tr>
<td>India</td>
<td>KOSMEK LTD. - INDIA</td>
<td>+91-9880561695</td>
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<tr>
<td>Thailand</td>
<td>TEL. +66-2-300-5132</td>
<td>FAX. +66-2-300-5133</td>
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<tr>
<td>Taiwan</td>
<td>Full Life Trading Co., Ltd.</td>
<td>+886-2-82261860</td>
<td>+886-2-82261890</td>
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<tr>
<td>Philippines</td>
<td>G.E.T. Inc, Phil.</td>
<td>+63-2-310-7286</td>
<td>+63-2-310-7286</td>
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<tr>
<td>Indonesia</td>
<td>P.T PANDU HYDRO PNEUMATICS</td>
<td>+62-21-5818632</td>
<td>FAX. +62-21-5814857</td>
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## Sales Offices in Japan

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<th>Office Type</th>
<th>TEL.</th>
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<tr>
<td>Head Office</td>
<td>078-991-5115</td>
<td>078-991-8787</td>
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<tr>
<td>Osaka Sales Office</td>
<td>048-652-8839</td>
<td>048-652-8828</td>
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<tr>
<td>Overseas Sales</td>
<td>0566-74-8778</td>
<td>0566-74-8808</td>
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<td>Tokyo Sales Office</td>
<td>092-433-0424</td>
<td>092-433-0426</td>
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</tbody>
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Overseas Affiliates and Sales Offices
Distributors

Canada
U.S.A.
Europe
Asia
Brazil
Australia
Mexico
Japan
China
Taiwan
Philippines
Thailand
India
Singapore
Malaysia
Indonesia

Asia Detailed Map

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