Hydraulic Unit

5ℓ / 10ℓ Tank

Model CPB/CPD/CPC/CPE
Model CQC/CQE

NEW

Converts Factory Compressed Air into Hydraulic Pressure.
Compact Hydraulic Unit Composed of Pump, Non-Leak Valve, Pressure Relief Valve, Pressure Switch and Oil Tank

© Applicable Clamp Models

GA  GD  GBB  GBE  GBC  GBF  GBP  GBQ  RA

● Energy Saving

The pump drives (consumes the air pressure) only during pressurization. After the pressurization, air pressure and hydraulic pressure reach equilibrium and the pump stops. Air consumption is zero after the pressurization is completed.

● Maintains Hydraulic Pressure with Non-Leak Valve

Non-leak valve (BA valve) maintains hydraulic pressure even when air supply is stopped preventing the die from falling.

● Maintains Set Pressure with Pressure Relief Valve

The set pressure: 25MPa is maintained by the pressure relief valve (BR valve) even when hydraulic pressure rises during the press machine operation.

● Pressure Supply when Hydraulic Pressure Decreases

The pump drives and supplies pressure when the hydraulic pressure in the circuit decreases because of the temperature reduction etc. This ensures a constant clamping force.

● A Wide Range of Variations

Select a tank from 5ℓ and 10ℓ and a pump from four variations for the most suitable hydraulic unit according to the clamp system.
Model No. Indication

C P B M 0 0 0 - 2G H - 1 -

1 Unit

- **P**: For Small/Medium Clamp (5 \& Tank)
- **Q**: For Large Clamp (10 \& Tank)

Notes:
1. Only 2 Pump Model C: AC pump and E: AE pump can be installed on Q: For Large Clamp Unit (10 \& Tank).
2. Please refer to Model CP/CR (P.071) for 2 \& Tank.

2 Pump Model

- **B**: AB Pump
- **D**: AD Pump
- **C**: AC Pump
- **E**: AE Pump

Note:
1. B: AB Pump and D: AD Pump can be selected only when selecting 3 Unit P: For Small/Medium Clamp (5 \& Tank).

3 Pressure Code

- **M**: Working Pressure 25MPa, Pressure Switch Set Pressure INC. 17.6MPa, DEC. 2.94MPa
- **N**: Working Pressure 25MPa, Pressure Switch Set Pressure INC. 17.6MPa, DEC. 2.94MPa with Pressure Relief Valve \(^1\)

4 Fluid Code

- **0**: General Hydraulic Oil
- **G**: Water-Glycol (Iron Tank)
- **S**: Silicon Oil
- **F**: Fatty Acid Ester

5 Design No.

- **0**: Revision Number

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

- **G**: For Clamp Single Solenoid Valve
- **H**: For Die Lifter Single Solenoid Valve
- **R**: With Pressure Relief Valve \(^1\)

Notes:
1. Select the hydraulic unit with pressure relief valve when using hydraulic clamps under high temperature or large temperature change since there may be pressure fluctuation caused by temperature change.
2. For R: Pressure Relief Valve or Pressure Code is "N".

7 Voltage Code

- **1**: AC100V (50/60Hz)
- **2**: AC200V (50/60Hz)
- **3**: AC110V (50/60Hz)
- **4**: AC220V (50/60Hz)
- **5**: DC24V

8 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 \(^2\)
- **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 (CP/CR: only 5 \& tank can be selected.) \(^3\)

Notes:
1. When selecting Option N: Piping Port NPT Thread, dimensions in the specification sheet and other documents are in inches.
2. Iron Tank is the standard option for CP/CR:10 \& Tank.
3. Please contact us for specifications and external dimensions for these options.
4. The external dimensions for five circuits and six circuits are different. Please contact us for detail.
Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>CPBM</th>
<th>CPBN</th>
<th>CPDM</th>
<th>CPDN</th>
<th>CPCM</th>
<th>CPCN</th>
<th>CPEM</th>
<th>CPEF</th>
<th>CQCM</th>
<th>CQCN</th>
<th>CQEM</th>
<th>CQEN</th>
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<tbody>
<tr>
<td>Working Hydraulic Pressure MPa</td>
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<td>Withstanding Pressure MPa</td>
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<tr>
<td>Tank Capacity l (Actual Amount for Use 3.7 l : H.L.5 l - L.L.1.3 l ) 10 l (Actual Amount for Use 7 l : H.L.10 l - L.L.3 l )</td>
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<td>Operating Temperature °C</td>
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Use Frequency

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<th>Use Frequency</th>
<th>Pressure Rising Time</th>
<th>Cycle</th>
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<tr>
<td>Suction</td>
<td>20 Cycles / Day or less</td>
<td>Less than 2.5 min. / Cycle</td>
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<td>Filter</td>
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<td>174 μm (100 Mesh)</td>
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Main Components

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<tr>
<th>Non-Leak Valve</th>
<th>Model No.</th>
<th>JF1030</th>
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<tr>
<td>Pressure Switch</td>
<td>Model No.</td>
<td>JBA2700-0G</td>
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<td>(For Clamp)</td>
<td>Operation Mode/Select Pressure MPa</td>
<td>Pressure Increase Detection / INC. 17.6</td>
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<td>Pressure Switch</td>
<td>Model No.</td>
<td>JBA0700-0G</td>
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<tr>
<td>(For Die Lift)</td>
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<td>Pressure Decrease Detection / DEC. 2.94</td>
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<tr>
<td>Relief Valve</td>
<td>Model No.</td>
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<tr>
<td>Set Pressure MPa</td>
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</table>

Notes:

1. Iron Tank Capacity is 5 l (Actual Amount for Use 2.9 l : H.L. 5.1 l - L.L. 2.2 l ).
2. If hydraulic viscosity is higher than specified, action time will be longer. Please use equivalent hydraulic oil to ISO-VG-32.
3. If using it at low temperature, action time will be longer because the viscosity of hydraulic oil becomes higher.
4. When setting a pressure gauge to a hydraulic circuit, install a damper or use an oil-filled (glycerin) pressure gauge in order to prevent damage caused by pressure surging.
5. Provide enough space at the top of the unit taking into consideration the maintenance of the pump.

Circuit Symbol

This shows the circuit symbol of CPB8N0-10-2GRH-5.

![Circuit Diagram](image-url)
**External Dimensions：CPB**

※ This drawing shows CPBM000-2GH standard model. Please contact us for external dimensions for options.

**External Dimensions：CPD**

※ This drawing shows CPDM000-2GH standard model. Please contact us for external dimensions for options.
Hydraulic Unit

External Dimensions: CPC

- This drawing shows CPCM000-2GH standard model. Please contact us for external dimensions for options.

Diagram of CPC hydraulic unit with labeled parts such as Air Solenoid Valve, Oil Supply Port, Conduit Hole, Terminal Block, BA Valve, JBA Pressure Switch, and others.

External Dimensions: CPE

- This drawing shows CPEM000-2GH standard model. Please contact us for external dimensions for options.

Diagram of CPE hydraulic unit with labeled parts similar to CPC.
External Dimensions: CQC

- This drawing shows CQCM000-2GH standard model. Please contact us for external dimensions for options.

External Dimensions: CQE

- This drawing shows CQEM000-2GH standard model. Please contact us for external dimensions for options.
External Dimensions : CPSH000 (Wall Mounted)

- 3-M10x1.5x25 Bolt (Included)
- JIS Spring Washer
- 4-M10x1.5 Thread

<table>
<thead>
<tr>
<th>Hydraulic Unit Model No.</th>
<th>Dimension A</th>
<th>Dimension B</th>
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<tr>
<td>CPB</td>
<td>317</td>
<td>33</td>
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<tr>
<td>CPD</td>
<td>337</td>
<td>33</td>
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<tr>
<td>CPC</td>
<td>385</td>
<td>65</td>
</tr>
<tr>
<td>CPE</td>
<td>420</td>
<td>65</td>
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</tbody>
</table>

External Dimensions : CPSR000 (Anti-Vibration Rubber)

- 4-M10x1.5 Thread
- Round Rubber Vibration Isolators
- KA-50 (KURASHIKI KAKO)

<table>
<thead>
<tr>
<th>Hydraulic Unit Model No.</th>
<th>Dimension A</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPB</td>
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<tr>
<td>CPD</td>
<td>337</td>
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<tr>
<td>CPC</td>
<td>385</td>
</tr>
<tr>
<td>CPE</td>
<td>420</td>
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</tbody>
</table>
External Dimensions : CPSV000 (Floor Mounted)

Hydraulic Unit Model No. | Dimension A | Dimension B
--- | --- | ---
CPB | 317 | 238
CPD | 337 | 238
CPC | 385 | 238
CPE | 420 | 238

External Dimensions : CQSV000 (Floor Mounted)

Hydraulic Unit Model No. | Dimension A | Dimension B | Dimension C
--- | --- | --- | ---
CQC | 385 | 283 | 48
CQE | 420 | 283 | 48
Cautions

Installation Notes (Cautions for Hydraulic Series)

1) Check the fluid to use
   - Please use the appropriate fluid by referring to the Hydraulic Fluid List.
   - If hydraulic oil with viscosity grade higher than ISO-VG-32 is used, action time would be longer.
   - If using it at low temperature, action time will be longer because the viscosity of hydraulic oil becomes higher.

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.
   - Our products except some valves are not equipped with protective function to prevent dust and cutting chips going into the hydraulic system and pipeline.

3) Applying Sealing Tape
   - Wrap with tape 1 to 2 times following the screwing direction.
   - Pieces of the sealing tape can lead to air leaks and malfunction.
   - In order to prevent a foreign substance from going into the product during piping, it should be carefully cleaned.

4) Air Bleeding in the Hydraulic Circuit
   - If the hydraulic circuit has excessive air, the action time may become very long.
   - After installing the hydraulic circuit, or if the pump run out of oil, be sure to bleed air by the following step.
     ① Reduce hydraulic supply pressure to less than 2MPa.
     ② Please loosen the cap nut of pipe fitting that is closest to clamps + RA die lifters by one full turn.
     ③ Wiggle the pipeline to loosen the outlet of pipeline fitting.
     The 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.

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

Hydraulic Fluid List

<table>
<thead>
<tr>
<th>ISO Viscosity Grade ISO-VG-32</th>
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<tbody>
<tr>
<td>Maker</td>
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<tr>
<td>Showa Shell Sekiyu</td>
</tr>
<tr>
<td>Idemitsu Kosan</td>
</tr>
<tr>
<td>JX Nippon Oil &amp; Energy</td>
</tr>
<tr>
<td>Cosmo Oil</td>
</tr>
<tr>
<td>ExxonMobil</td>
</tr>
<tr>
<td>Matsumura Oil</td>
</tr>
<tr>
<td>Castrol</td>
</tr>
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</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.

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.

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.
  2. The hydraulic machine / air compressor should be handled and maintained by qualified personnel.
  3. Do not handle or remove the machine unless the safety protocols are ensured.
  4. Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
  5. Do not touch clamps (cylinders) while they are working. Otherwise, your hands may be injured.
  6. Do not disassemble or modify.
  7. If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

- **Maintenance • Inspection**
  1. Removal of the Machine and Shut-off of Pressure Source
  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. Make sure there is no abnormality in the bolts and respective parts before restarting.
  4. Regularly clean the area around the equipment.
  5. If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage and air leaks.
  6. If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.
  7. Regularly tighten bolts and pipe line, mounting bolts, nuts, circlips and cylinders to ensure proper use.
  8. Make sure the hydraulic fluid has not deteriorated.
  9. Make sure there is smooth action and no abnormal noise.
  10. Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
  11. The products should be stored in the cool and dark place without direct sunshine or moisture.
  12. 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 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>TEL.</th>
<th>FAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Japan</strong></td>
<td><strong>+81-78-991-5162</strong></td>
<td><strong>+81-78-991-8787</strong></td>
</tr>
<tr>
<td><strong>Overseas Sales</strong></td>
<td><strong>KOSMEK LTD.</strong></td>
<td><strong>1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241</strong></td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td><strong>+1-630-620-7650</strong></td>
<td><strong>+1-630-620-9015</strong></td>
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<tr>
<td><strong>KOSMEK（USA）LTD.</strong></td>
<td><strong>650 Springer Drive, Lombard, IL 60148 USA</strong></td>
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<tr>
<td><strong>Mexico</strong></td>
<td><strong>+52-442-161-2347</strong></td>
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<tr>
<td><strong>KOSMEK USA Mexico Office</strong></td>
<td><strong>Blvd Jurica la Campana 1040, B Colonia Punta Juriquilla Queretaro, QRO 76230 Mexico</strong></td>
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<td><strong>EUROPE</strong></td>
<td><strong>+43-463-287587</strong></td>
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<tr>
<td><strong>KOSMEK EUROPE GmbH</strong></td>
<td><strong>Schlepppeplatz 2 9020 Klagenfurt am Wörthersee Austria</strong></td>
<td></td>
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<tr>
<td><strong>China</strong></td>
<td><strong>+86-21-54253000</strong></td>
<td><strong>+86-21-54253709</strong></td>
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<tr>
<td><strong>KOSMEK（CHINA）LTD.</strong></td>
<td><strong>考世美(上海)贸易有限公司</strong></td>
<td><strong>Room 601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China</strong></td>
</tr>
<tr>
<td><strong>India</strong></td>
<td><strong>+91-9880561695</strong></td>
<td><strong>+91-9880561695</strong></td>
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<tr>
<td><strong>KOSMEK LTD - INDIA</strong></td>
<td><strong>F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India</strong></td>
<td></td>
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<tr>
<td><strong>Thailand</strong></td>
<td><strong>+66-2-300-5132</strong></td>
<td><strong>+66-2-300-5133</strong></td>
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<tr>
<td><strong>Thailand Representative Office</strong></td>
<td><strong>67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand</strong></td>
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</tr>
<tr>
<td><strong>Taiwan</strong></td>
<td><strong>+886-2-82261860</strong></td>
<td><strong>+886-2-82261890</strong></td>
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<tr>
<td><strong>Full Life Trading Co., Ltd.</strong></td>
<td><strong>發生意貿有限公司</strong></td>
<td><strong>16F-4, No.2, Jian Ba Rd, Zhonghe District, New Taipei City Taiwan 23511</strong></td>
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<tr>
<td><strong>Philippines</strong></td>
<td><strong>+63-2-310-7286</strong></td>
<td><strong>+63-2-310-7286</strong></td>
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<tr>
<td><strong>G.E.T. Inc, Phil.</strong></td>
<td><strong>Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427</strong></td>
<td></td>
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<tr>
<td><strong>Indonesia</strong></td>
<td><strong>+62-21-29628607</strong></td>
<td><strong>+62-21-29628608</strong></td>
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<tr>
<td><strong>Indonesia (Indonesia Exclusive Distributor)</strong></td>
<td><strong>PT. Yamata Machinery</strong></td>
<td><strong>Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia</strong></td>
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## Sales Offices in Japan

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<th>FAX.</th>
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<td><strong>078-991-5162</strong></td>
<td><strong>078-991-8787</strong></td>
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<td>Osaka Sales Office</td>
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Global Network

Overseas Affiliates and Sales Offices

Distributors

Asia Detailed Map

FOR FURTHER INFORMATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.

SPECIFICATIONS IN THIS CATALOG ARE SUBJECT TO CHANGE WITHOUT NOTICE.