Motion Control Solutions for Medical Applications
# Application Examples

## X-Y-Z Gantry System
Belt & pulley or ball screw X-Y gantry systems are positioning applications where stepper motors are used. The PKP Series has beneficial features such as:
- High torque to achieve higher machine throughput
- High permissible radial load to handle tighter belt tension
Our CVD driver has low vibration technology to achieve lower noise and smoother operation.

<table>
<thead>
<tr>
<th>Product</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKP Series</td>
<td>PKP244D15A2</td>
</tr>
<tr>
<td>CVD Series</td>
<td>CVD215BR-K</td>
</tr>
</tbody>
</table>

## Capping
Capping applications require a torque control feature, which Oriental Motor's Brushless motor BLH Series has. When a certain torque value is reached, the motor keeps applying the same torque, while outputting a torque limit control signal.

## Tube Pump
Pump applications require smooth movement and easy speed control. PKP Series with CVD Series SC speed control/driver type offer features such as:
- Great current control technology for lower vibration.
- No requirement for pulse generator.

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<tr>
<td>PKP Series</td>
<td>PKP566FN24A2</td>
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<tr>
<td>CVD Series SC Type</td>
<td>CVD524BR-KSC</td>
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## Peristaltic Pump
Peristaltic pumps require high stopping accuracy to dispense liquid precisely. The PKP series high resolution type has a higher stopping accuracy than the standard type.

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<td>PKP244MD14A2</td>
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<td>CVD2V-KS</td>
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Advances in Stepper Motor and Driver Technology

PKP Series Stepper Motor
• Increased Torque

![Torque Chart]

Constant Current Driver Power Supply Voltage: 24 VDC
With Clean Damper: $J_w=34\times10^{-6}\text{ kg m}^2$, (Only for PK345DB)

- PKP245D23B2 (Current: 2.3 A/Phase)
- PK345DB (Current: 1.5 A/Phase)

![Motor Diagram]

- Smaller Air Gap
- Larger Diameter Shaft
- Permanent Magnet
- Improved Strength
- Higher Winding Density

PKP Model 42mm (NEMA17)
Conventional Model 42mm (NEMA17)

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<th>Distance from the shaft end</th>
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- 40% Less Heat

- 70% higher

PKP244D08B (0.54 A/Phase)

CVD Series Stepper Motor Driver
• Reduced Noise and Vibration

Smooth Drive Control Reduces Step Vibration

![Vibration Chart]

Significant Improvement in vibration level at all speed levels

- PKP244D08B (0.54 A/Phase)
- CVD233FR8-K

- Constant Current Driver Power Supply Voltage: 24 VDC
- With Clean Damper: $J_w=34\times10^{-6}\text{ kg m}^2$, (Only for PK245DB)

- PK245DB (Current: 1.5 A/Phase)
- PK245DB (Current: 1.5 A/Phase)

- Smaller Air Gap
- Larger Diameter Shaft
- Permanent Magnet
- Improved Strength
- Higher Winding Density

- 40% Less Heat

- 70% higher

PK245DB (Current: 1.5 A/Phase)

PKP245D23B2
CVD233FR8-K

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- 70% higher

PK245DB (Current: 1.5 A/Phase)

High Performance

Communication Types:
- Pulse Input
- RS 485
- Speed Control (I/O)

POWER LED and alarm LED indicator (protective function)

Operation current setting switch

Step angle setting switch

Step angle selection and smooth drive switch

- 40% Less Heat

- 70% higher

- PKP244D08B (0.54 A/Phase)
Product Line Up

PKP Series

Standard type
Frame size 20mm(NEMA8)~85mm(NEMA34)

High Resolution Type
Flat Type
Flat Type (with Harmonic Gear)

Geared Type
Planetary Gear (Neugart)
Encoder Type
Electromagnetic Brake Type

CVD Series

Board Type
Right Angle Connector
Horizontal Type
Vertical Type
Speed Control Type

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