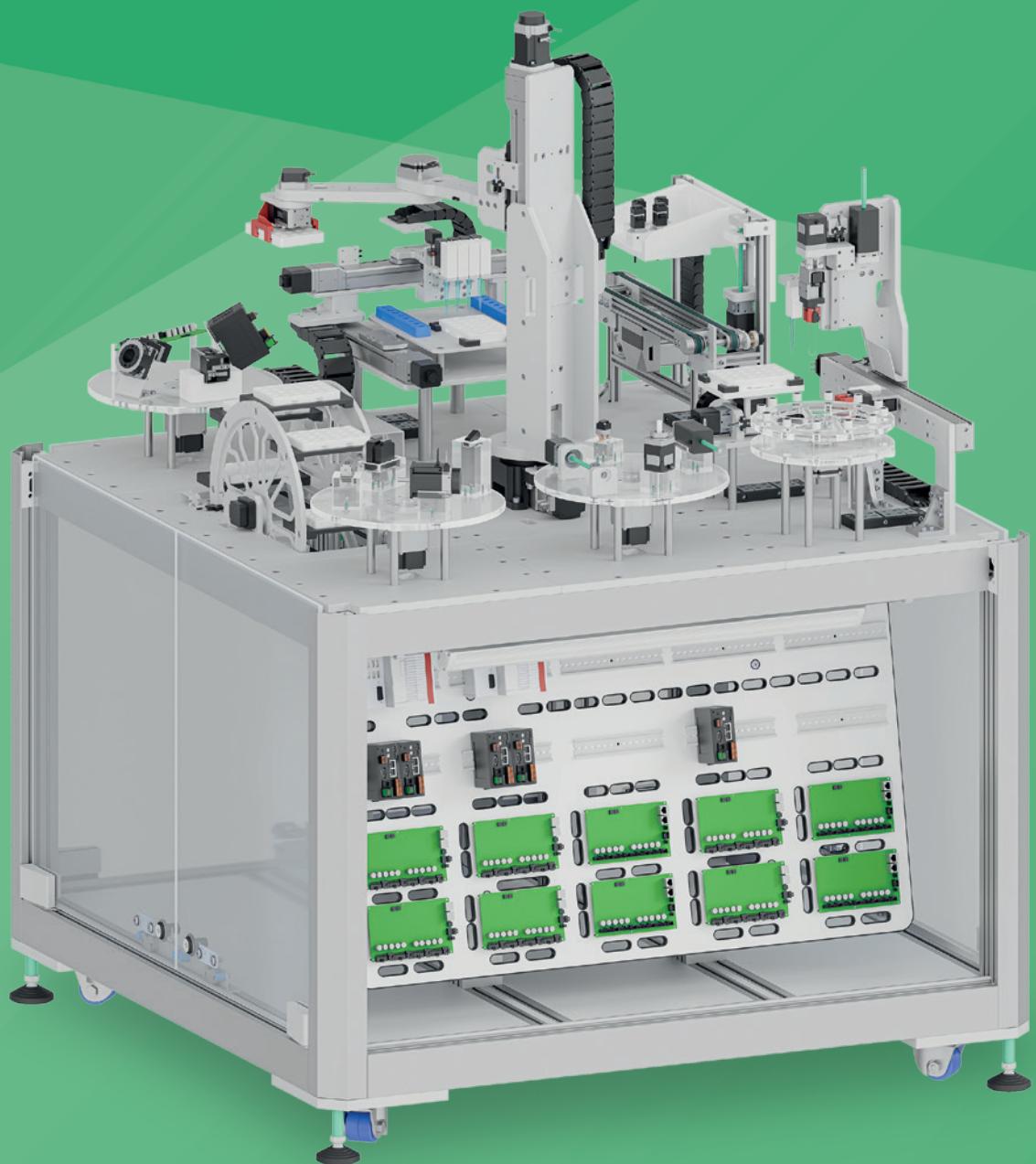


Your Partner for  
Medical Motion Equipment!

**Applications and Motion Solutions for your  
Automation Process in Medical Technology**



# The World of Stepper Motors for Your Requirements.

## Ideas and Suggestions for an Optimal Production Process

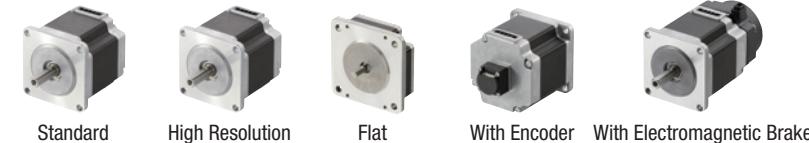
The challenges in medical technology are as diverse as they are demanding. To meet these challenges, Oriental Motor provides a powerful portfolio of stepper motors and driver solutions. These components are ideal for implementing precise, reliable motion control in a wide variety of medical applications.

Under the guiding theme of 'Sample Handling', discover how intelligent motion solutions can support key processes such as SCARA-based sample transfer, de-capping of vials, pipetting, and more.

At the heart of the system is the new **CVD Series** multi-axis driver with EtherCAT communication. This central control unit enables seamless operation of a wide selection of 2-phase and 5-phase stepper motors and complementary peripherals—each showcased in the following examples.

## Many Combinations of Motors, Actuators, and Rotary Encoders are Possible

### 2-Phase Stepper Motor **PKP** Series Bipolar 4 Lead Wires



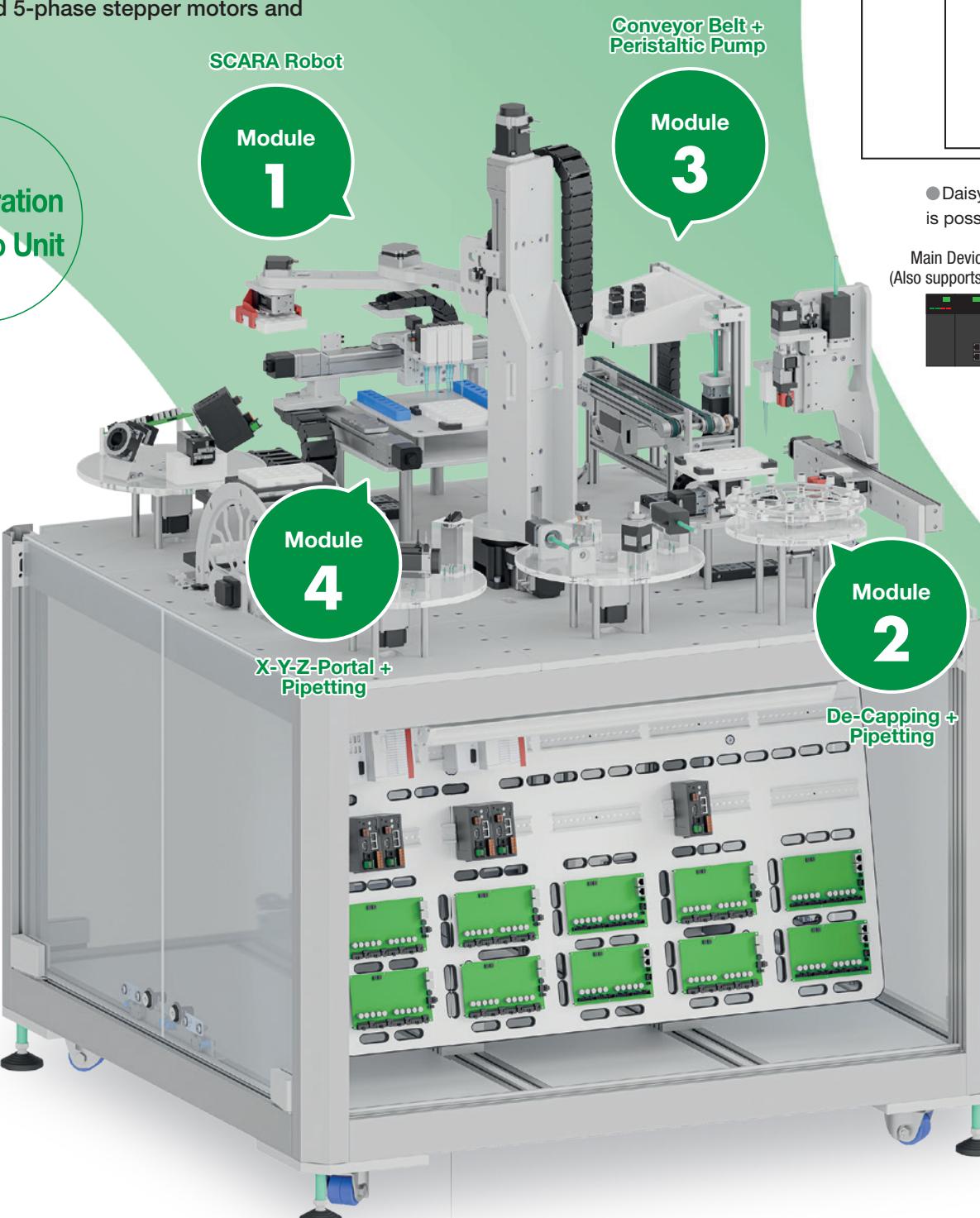
### 5-Phase Stepper Motors **PKP/PK** Series



Compact Electric Cylinder **DRL II** Series      Hollow Rotary Actuator **DH** Series      Mounting Adapter for Linear Actuator & Stepper Motor **PKP** Series

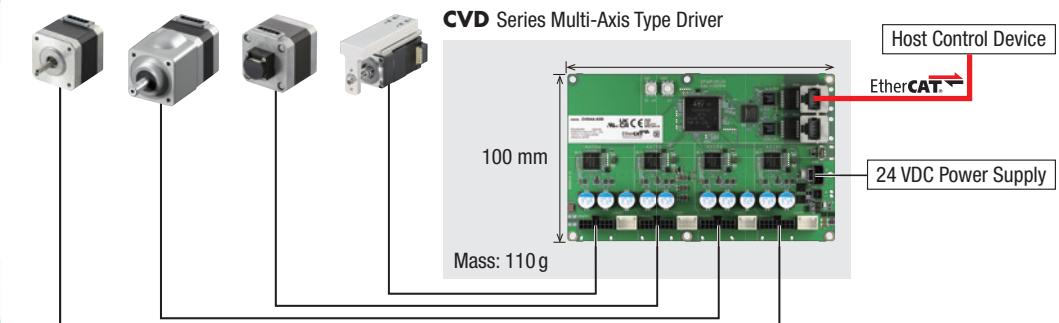


### Configuration of Demo Unit

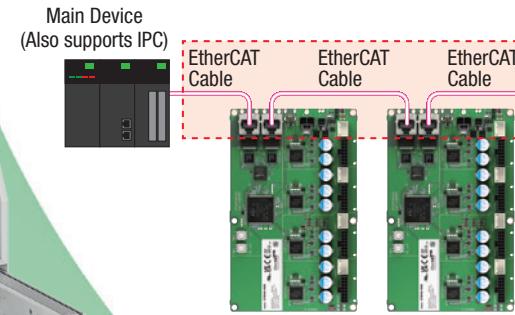


## EtherCAT Compatible/4-Axis Control Reduces Wiring and Saves Space

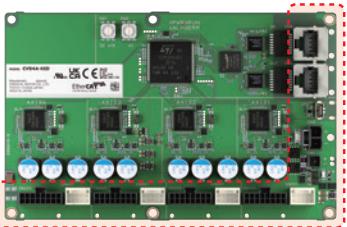
- I/O signals are consolidated into a single EtherCAT communication cable. Wiring for communication, power supply, etc. for 4-axis are integrated into a single driver
- Reduces work hours for wiring and decreases problems from mis-wiring
- Integrated management of device information including motor information by using an EtherCAT master



- Daisy-chain connection of multi-axis drivers is possible
- The right-angle connector direction type can be installed with several units placed side by side, eliminating crowded wiring and saving space.



- Driver connector positions are concentrated on two sides. This simplifies wire bundling.



Unlock the full experience.

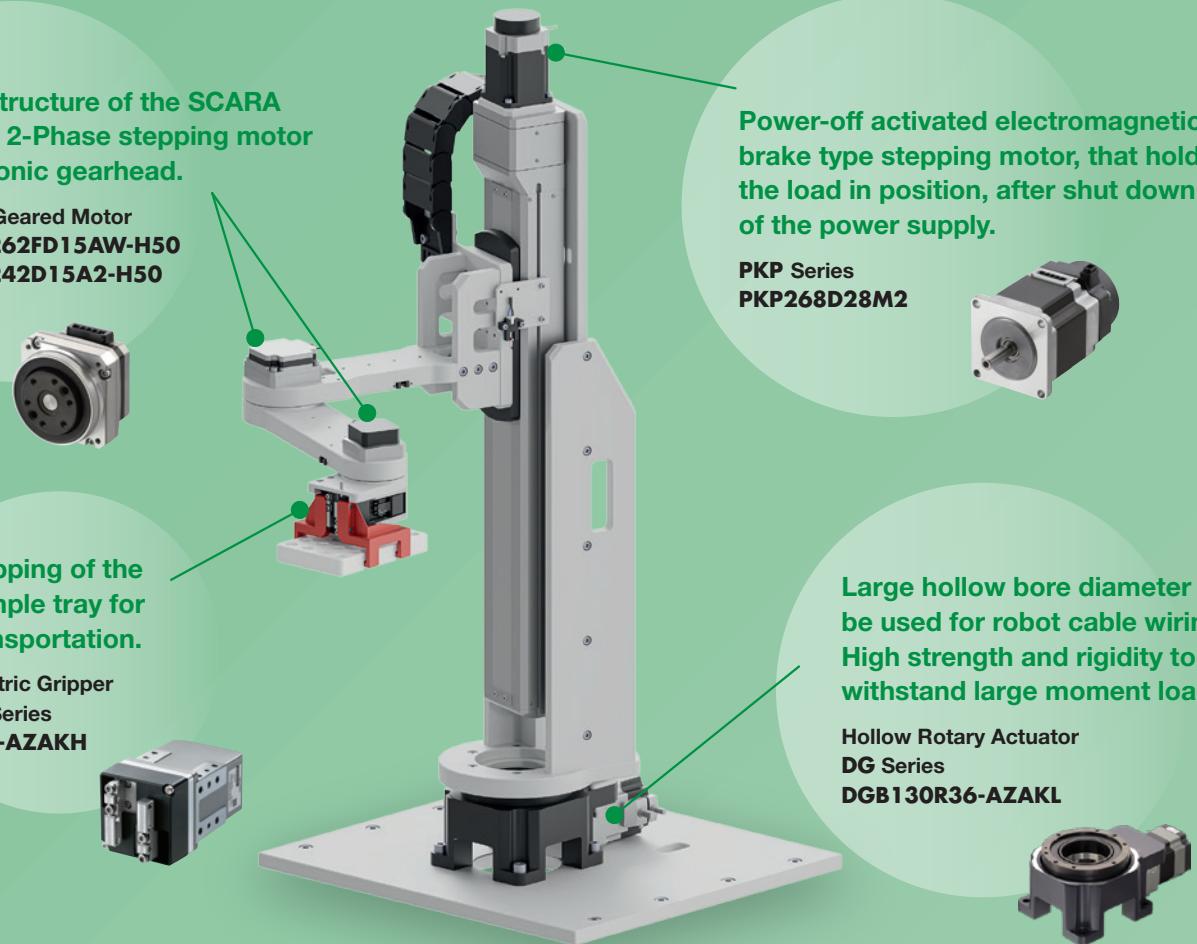


Module  
**1**

## Z-Axis + SCARA Robot + End-Effector

Two-link structure of the SCARA robot with 2-Phase stepping motor and Harmonic gearhead.

PKP Series Geared Motor  
Axis 1: PKP262FD15AW-H50  
Axis 2: PKP242D15A2-H50

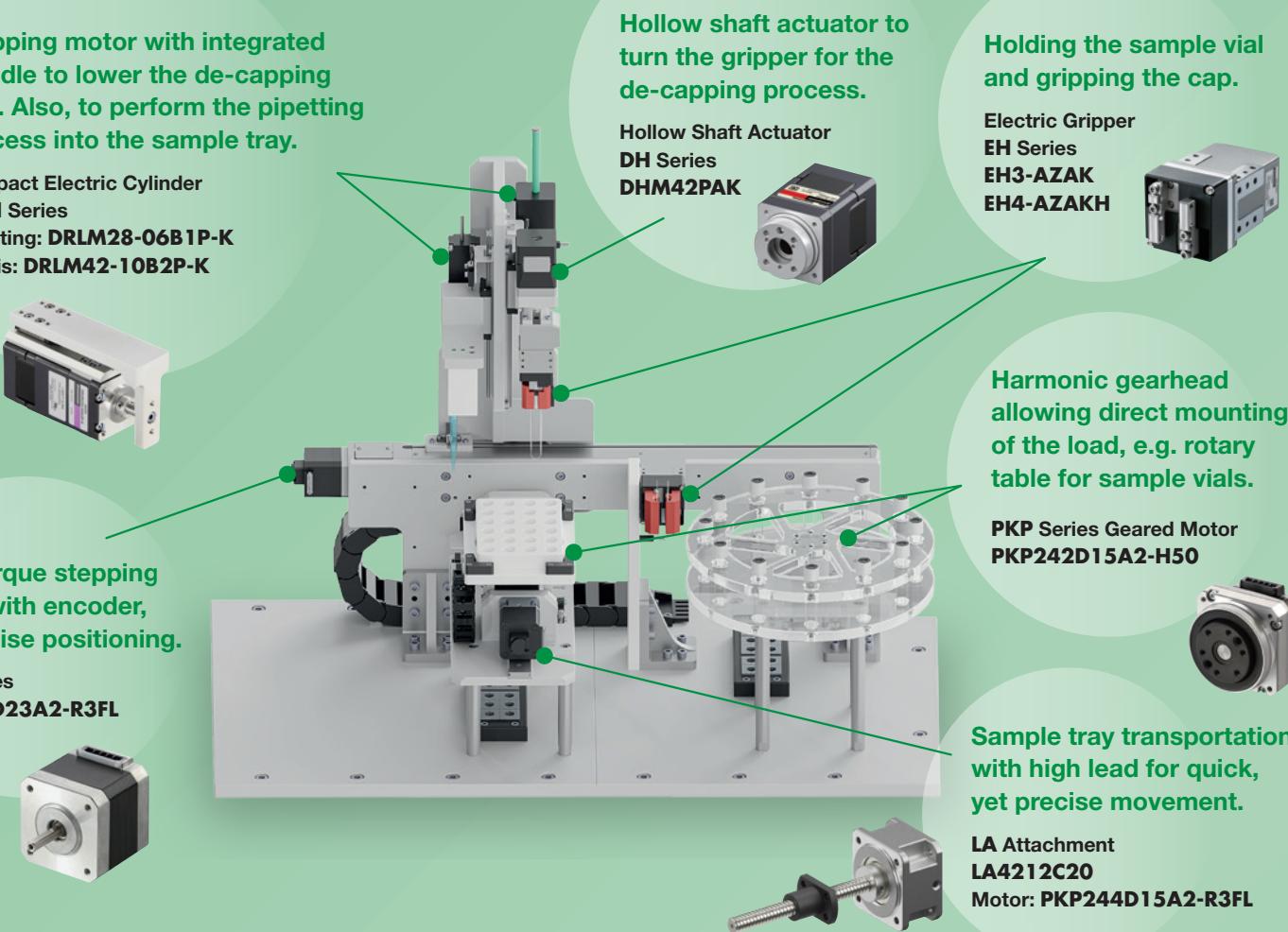


Module  
**2**

## De-Capping + Pipetting

Stepping motor with integrated spindle to lower the de-capping arm. Also, to perform the pipetting process into the sample tray.

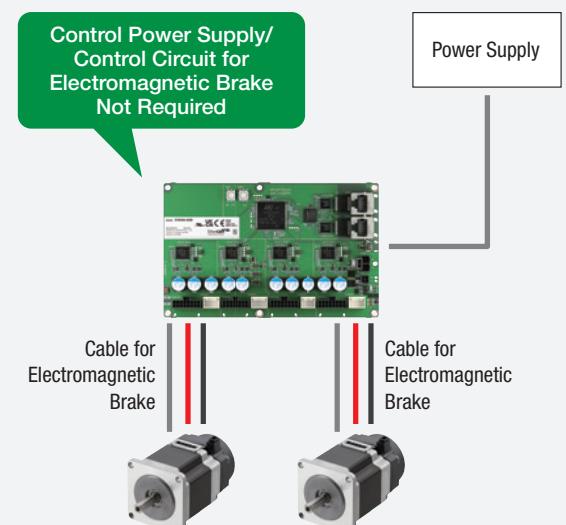
Compact Electric Cylinder  
DRLII Series  
Pipetting: DRLM28-06B1P-K  
Z-Axis: DRLM42-10B2P-K



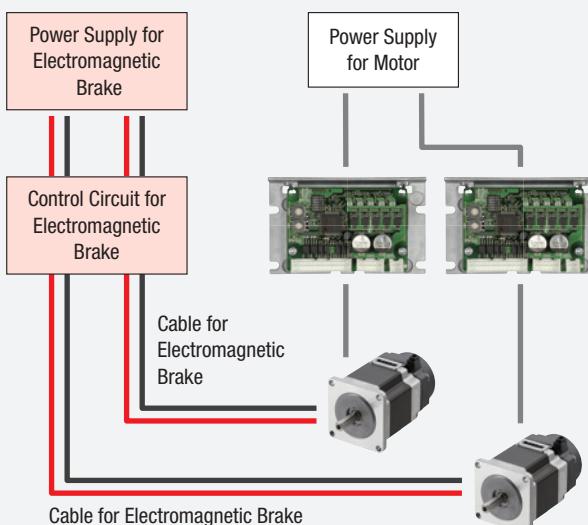
## Automatic Control of Electromagnetic Brake and Power Supply

- No electromagnetic brake control circuit is needed, which reduces program creation time
- Reduced wiring work time

### CVD Series Multi-Axis Type

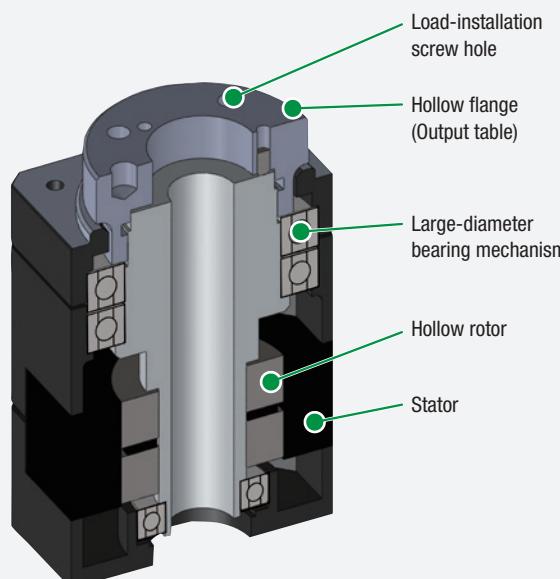


### Conventional Product

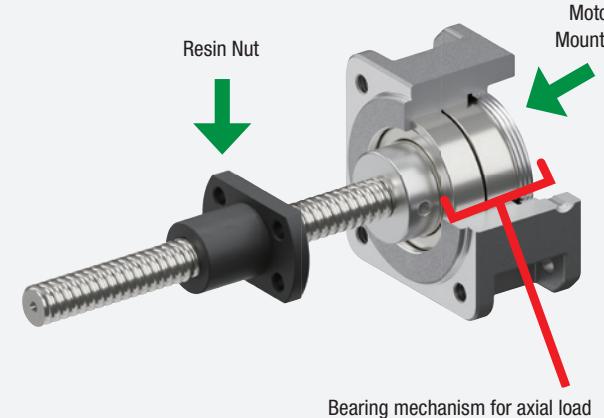


## Advantages for Equipment Design

### DH Series Structure



### LA Attachment Structure



Module  
**3**

## Conveyor Belt + Peristaltic Pump

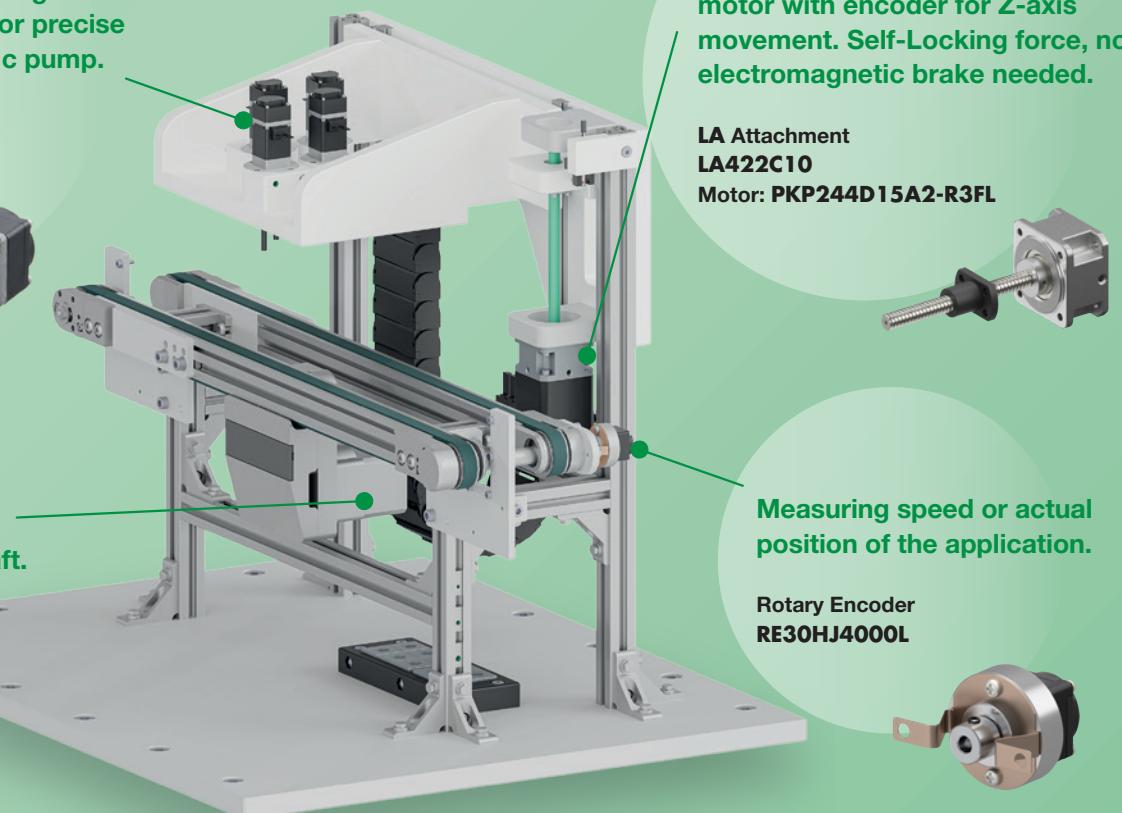
Stepping motor with high resolution encoder for precise dosing at a peristaltic pump.

PKP Series  
PKP523MN03A-R3JL



Conveyor belt drive with a stepping motor and spur gearhead with centred shaft.

PKP Geared Motor  
PKP243D15A2-CS10



Linear attachment with a stepping motor with encoder for Z-axis movement. Self-Locking force, no electromagnetic brake needed.

LA Attachment  
LA422C10  
Motor: PKP244D15A2-R3FL



Measuring speed or actual position of the application.

Rotary Encoder  
RE30HJ4000L

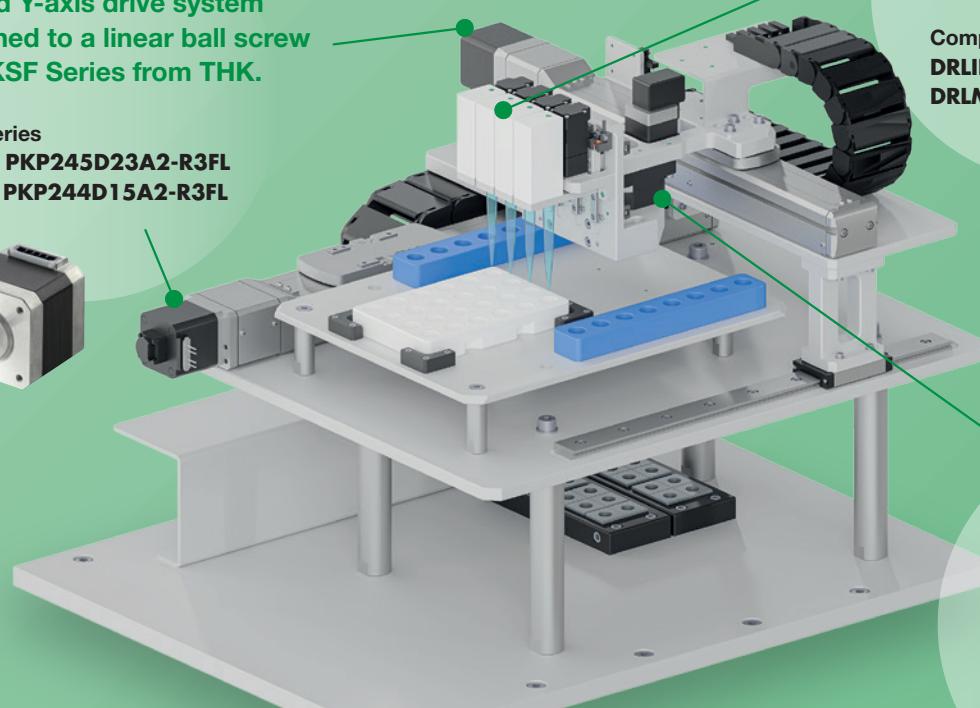


Module  
**4**

## X-Y-Z-Portal + Pipetting

X- and Y-axis drive system attached to a linear ball screw axis KSF Series from THK.

PKP Series  
X-Axis: PKP245D23A2-R3FL  
Y-Axis: PKP244D15A2-R3FL



Using 4 times a compact electric cylinder to perform synchronous pipetting process.

Compact Electric Cylinder  
DRLII Series  
DRLM20-02B1P-K



Swivel arm with a hollow rotary actuator to position the pipetting actuators.

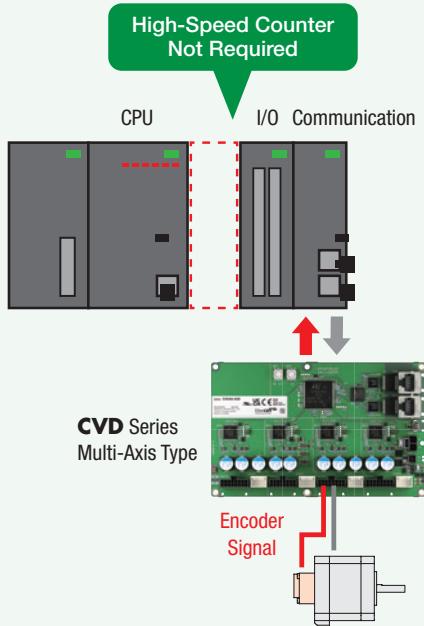
Hollow Rotary Actuator  
DG Series  
DGM60-AZAK



**THK & Orientalmotor**

THK offers standardised mounting options for stepper motors from Oriental Motor.

## Importing Encoder Information



Compatible with both motors with encoders and rotary encoders.

The driver is equipped with a function to import encoder information, thus position deviation can be detected within the driver without passing through the upper system.

PKP Series with Encoder	Rotary Encoder

Resolution  
2-Phase and 5-Phase Motors: 100 P/R up to 4.000 P/R

Resolution  
100 P/R up to 4.000 P/R

## Can Provide Power to Sensors

- Power supply for the sensor can be provided by the driver.
- This eliminates the need for an external power supply for the sensor, contributing to wiring savings.

**CVD Series Multi-Axis Type**

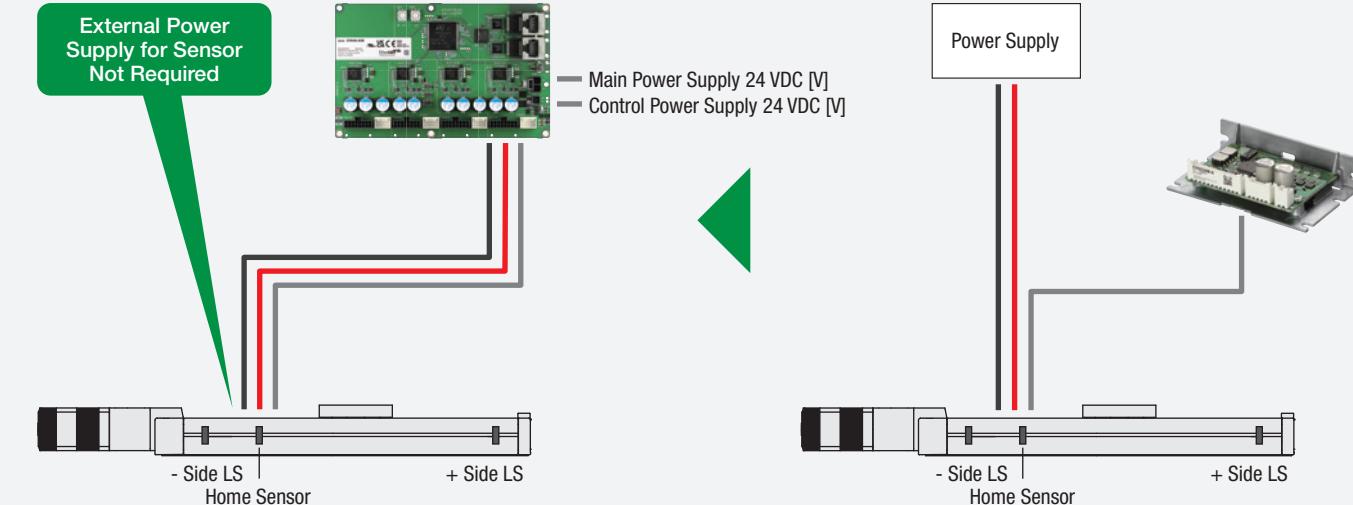
External Power Supply for Sensor Not Required



Main Power Supply 24 VDC [V]  
Control Power Supply 24 VDC [V]

**Conventional Product**

Power Supply



# High-Performance Motors and Actuators for Advanced Applications

The **AZ Series** offers a unified approach to motion control with its range of motors and linear or rotary actuators, all equipped with a battery-free absolute encoder.

Its versatile drivers are available in multiple formats and sizes, including models that support BUS communication for seamless integration into complex systems. By using a standardized motor across all actuators, the **AZ Series** reduces wiring complexity, simplifies control architecture, and minimizes maintenance. This results in faster setup times and lower engineering workload—critical advantages in demanding medical and automation environments.

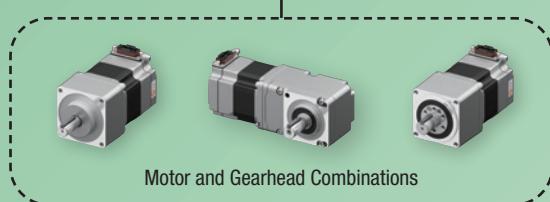
## ΑSTEP AZ Family



Single Axis Driver

mini Driver

Multi-Axis Driver



Motor and Gearhead Combinations

EtherCAT®

EtherNet/IP®

PROFINET

SSCNET III/H

MECHATROLINK

Modbus

### DGII Series

Rotary Tables with Hollow Shaft



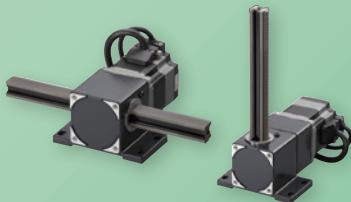
### DR/DRS2 Series

Stepper Motor with Integrated Ball Screw



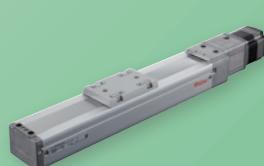
### L Series

Rack and Pinion



### EZS Series

Linear Axes with Ball Screw



### EAC Series

Electric Cylinder with Ball Screw



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