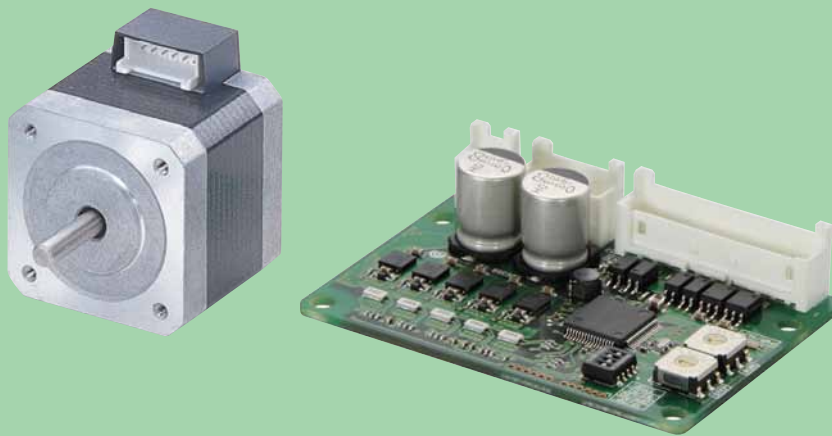


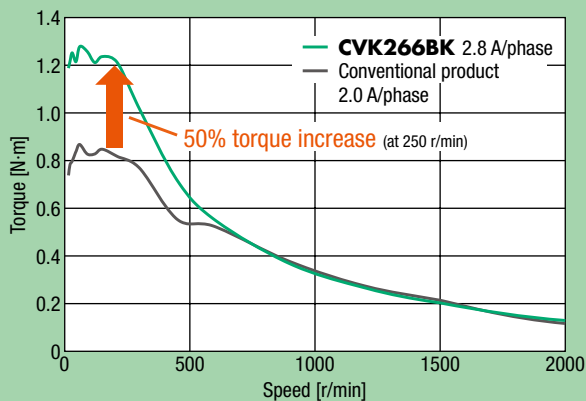
# 1.8° Stepper Motor

1.8° motor and driver packages now have the highest torque in the low-speed range. With Oriental Motor's higher current stepper motors and superior microstepping performance, low vibration is achieved throughout the speed range.



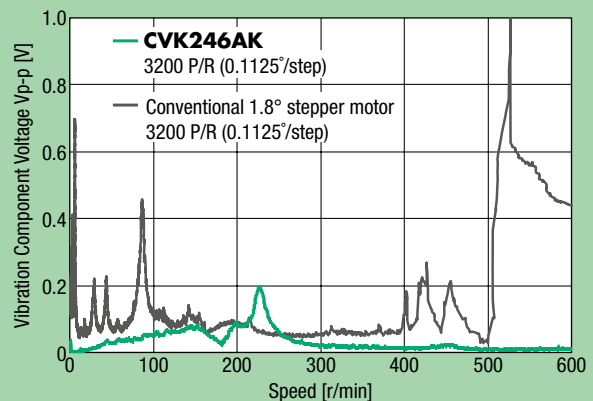
Revisions to the motor winding design and a high-efficiency driver circuit design allow for significant torque increases in the low-speed range. In particular, torque in the 250 r/min range has been increased by 50% compared to conventional products allowing for quicker moves. Vibration and noise have been greatly reduced compared to conventional 1.8° stepper motor performance.

## ● Comparison of 1.8° Stepper Motor Torque Characteristics



The maximum holding torque has increased with a bipolar winding.

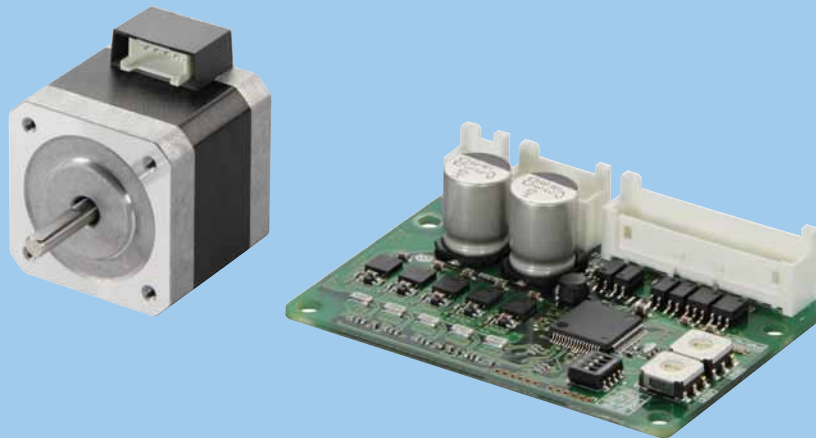
## ● Comparison of 1.8° Stepper Motor Vibration Characteristics



The vibration characteristics have been significantly improved across all speed ranges with the fully digital-controlled microstep driver.

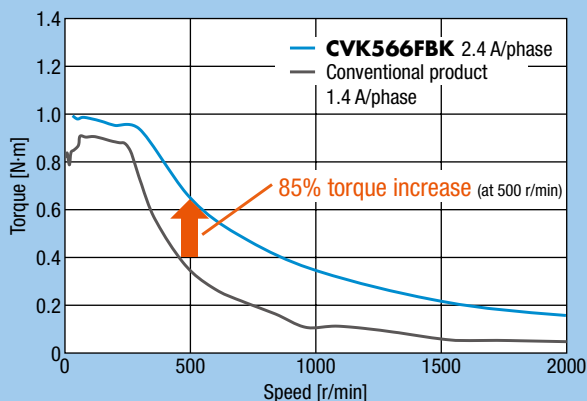
# 0.72° and 0.36° Stepper Motor

0.72° and 0.36° motor and driver packages have higher torque in the upper speed ranges. With Oriental Motor's motor technology and microstepping performance, even greater positional accuracy, lower vibration and noise are achieved.



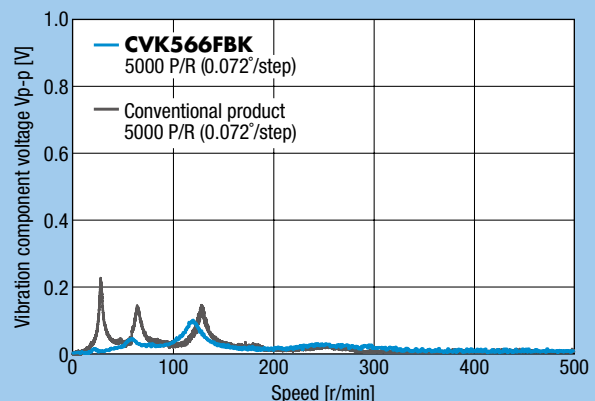
Through revisions to the motor winding design and a high-efficiency driver circuit design, the performance of 0.72°/0.36° stepper motors has been brought to their full potential, resulting in significant increases in torque in all speed ranges. Torque in the 500 r/min range has increased by 85% compared to conventional products. In addition, the fully digital-controlled microstep driver has further improved the low vibration and noise reduction factors.

## ● Comparison of 0.72°/0.36° Stepper Motor Torque Characteristics



By adopting a higher current motor winding specification, the usage range is now much wider.

## ● Comparison of 0.72°/0.36° Stepper Motor Vibration Characteristics

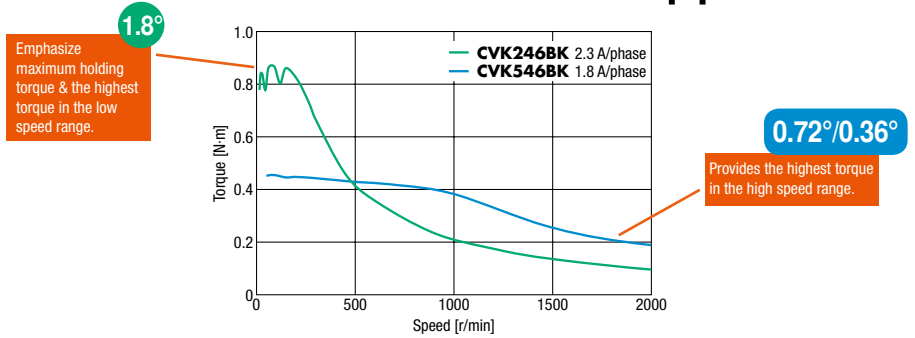


Lower vibration and further noise reductions have been achieved through the use of a fully digital-controlled microstep driver.

# Superior Performance with 1.8° or 0.72°/0.36° Stepper Motor and Driver Packages

## A Significant Torque Increase Allows for More Applications

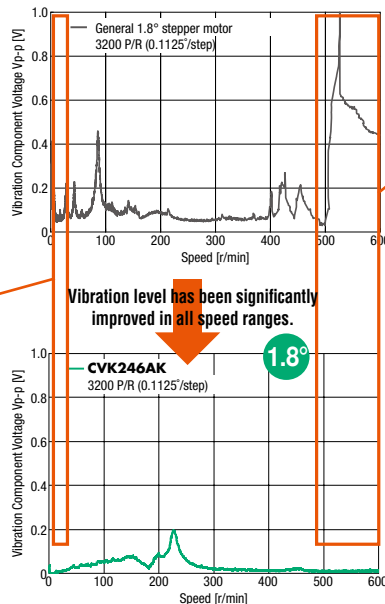
The maximum holding torque in the low-speed range is achieved with the 1.8° motor and driver packages through the use of a high motor current design and specification. The speed range has increased considerably with the 0.72°/0.36° packages.



## Low Vibration with Full-Time Microstepping

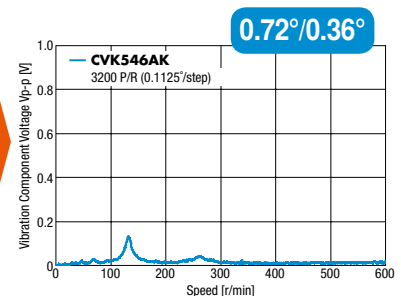
Low vibration and noise reduction have been achieved across all speed ranges by significantly improving the vibration level with the use of a fully digital-controlled full-time microstep driver. The CVK Series 0.72°/0.36° stepper motor has further improved vibration characteristic.

● **Reduced Step Vibration**  
The new smooth drive control with higher current control increases the basic step angle to a maximum resolution of 2048. As a result, a reduction in step vibration in the low-speed range is achieved.



● **Vibration Suppression Control**  
Common vibration that occurs in the mid-speed range has been suppressed. This enables more stable torque characteristics.

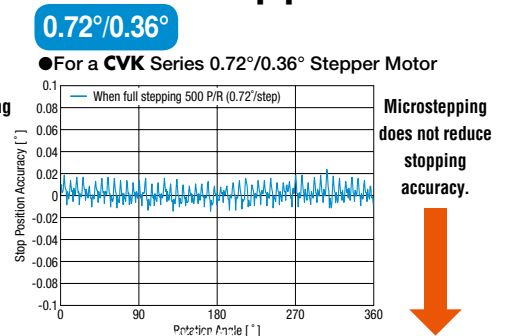
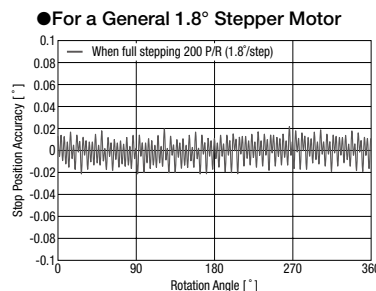
CVK Series  
Vibration characteristics for 0.72°/0.36° stepper motors have been further improved.



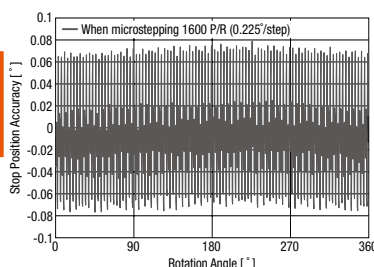
## For High Positioning Accuracy Use a 0.72°/0.36° Stepper Motor

In general, stopping accuracy tends to be lower during microstep operation\* than full step operation and this effect is more noticeable in a 1.8° motor. In this situation, using a CVK Series 0.72°/0.36° stepper motor enables a higher positioning accuracy.

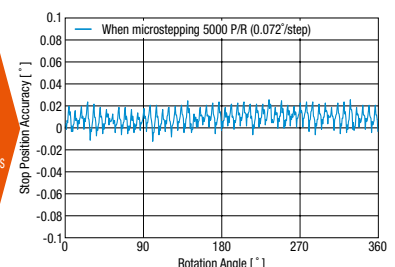
\* Max. resolution 125000 P/R



● **Stopping Accuracy**  
0.72° stepper motor standard type ±0.05° (±3 min)  
0.36° stepper motor high-resolution type ±0.034° (±2 min)



CVK Series  
High positioning accuracy is now possible with 0.72°/0.36° stepper motors

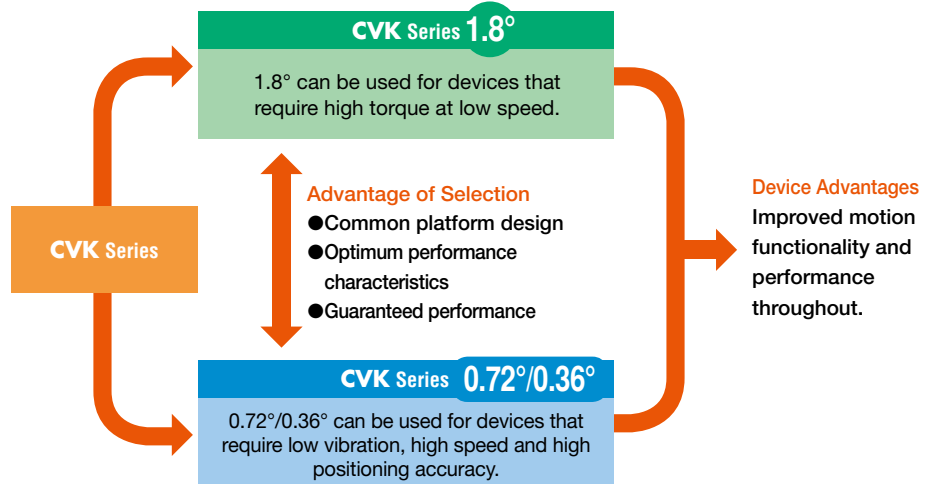


# Common Driver Installation and Wiring Allow for the Desired Performance.

## There's a Wide Choice with 1.8° and 0.72°/0.36° Stepper Motors

The size, installation and I/O connectors for the **CVK Series** 1.8° and 0.72°/0.36° motor and driver packages are the same. Because of this, it is easy to evaluate and select the proper package for the requirement.

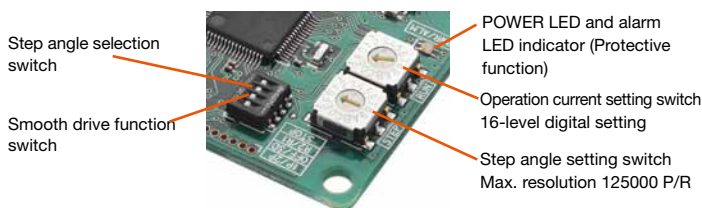
\* The driver for a 1.8° stepper motor and the driver for a 0.72°/0.36° stepper motor are not interchangeable. Each motor type has a dedicated driver. Use the Step Angle Setting Switch (page 20) to set the proper resolution without changing your controller's pulse output.



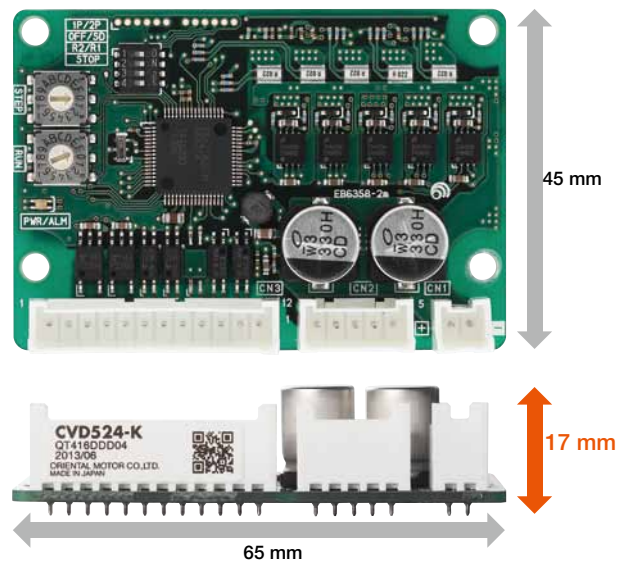
## High-Performance Driver in the Industry's Smallest Size Class

- Small and light driver contributes to space saving
- Protective function can detect driver abnormalities early
- Smooth drive microstepping function allows for a smooth operation
- Operation current can be set with a digital switch

- Name and function of each driver component



### Actual Size



## 1.8° and 0.72°/0.36° Stepper Motor Packages are Similarly Priced

In addition to improving the performance and function of the **CVK Series**, prices have been revised as well. Now, the price difference between a 1.8° and a 0.72°/0.36° stepper motor is minimal.

- Comparison Between a 1.8° and a 0.72°/0.36° Stepper Motor Packages:

