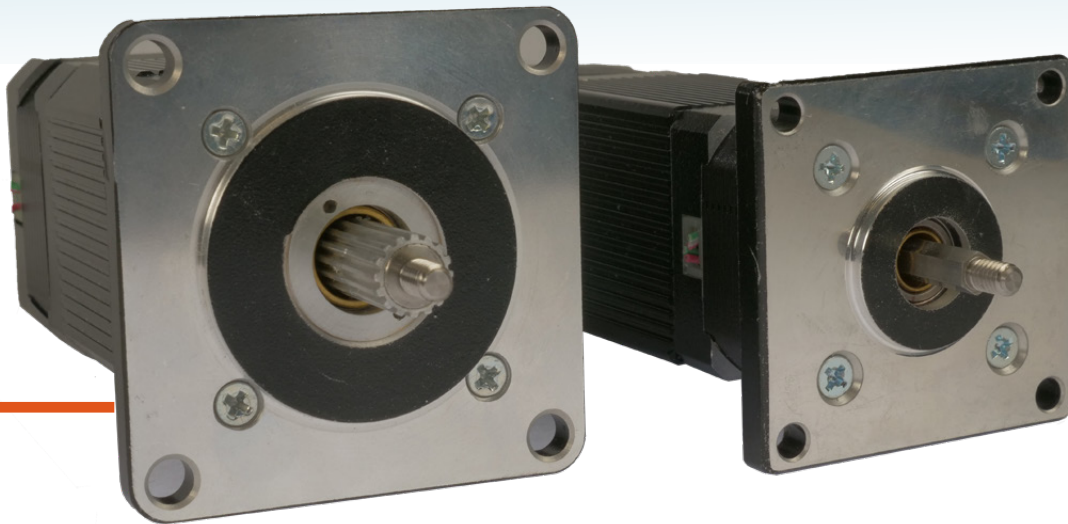


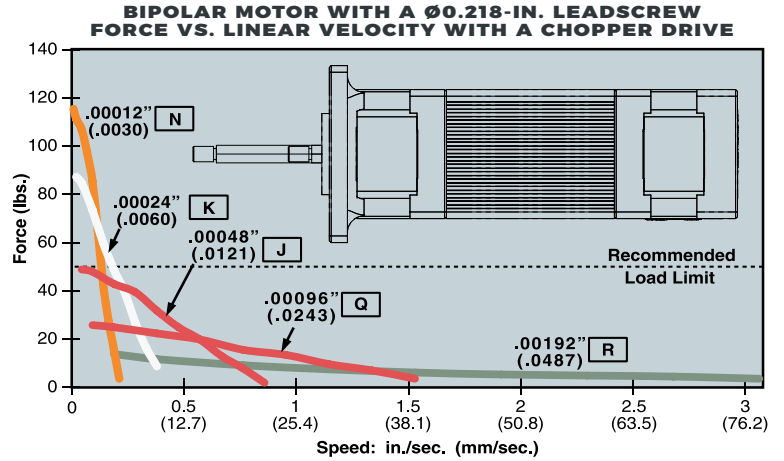
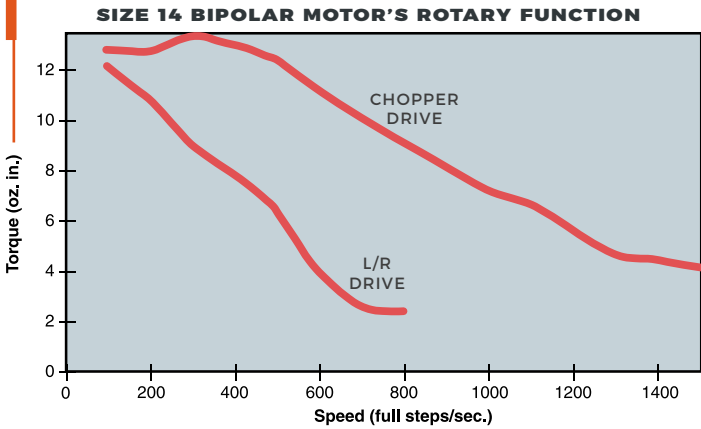
WHAT ARE DUAL-MOTION HYBRID ACTUATORS AND WHERE DO THEY EXCEL?



Some motion applications need axes to deliver both linear and rotary motion. Conventional designs for such functionality are often complicated and bulky. What's more, rotary motors put to linear motion often have output shafts that are inadequate for supporting heavy side loads.

In contrast, dual-motion actuators from Haydon Kerk of AMETEK Advanced Motion Solutions (AMS) are compact designs specifically designed to deliver linear and rotary motion. Patented features integrated with standard hybrid stepper-motor technology make for actuators that

HAYDON KERK 35000 SERIES DUAL-MOTION ACTUATORS



replace (and improve upon) more complicated solutions. In addition, the linear and rotary motions are fully independent — so dual-motion actuators can even lock an axis' linear motion while executing a rotary-motion task. Consider some dual-motion actuator applications:

- In automated lift latches, dual-motion actuators linearly push a mechanism forward and then rotate it out of the way to clear for a device. In a similar way, the actuators serve in an array of door assemblies — often lifting and moving doors out of the way to accommodate flow of parts and materials.
- Dual-motion actuators successfully drive shafts in laparoscopic instruments and other miniature medical devices that need to selectively and precisely reciprocate and rotate.
- Robotic pick-and-place applications might use dual-motion actuators to axially move a workpiece to an insertion position and then rotate that workpiece to screw it into place.

Haydon Kerk 35000 Series (Size 14) dual-motion actuators simplify designs by replacing more complicated mechanisms. The actuators also output linear and rotary motions that are fully independent. Values shown here are based on a 100% duty cycle for one suite of actuator variations.



For more information, visit the HAYDONKERKPITTMAN.COM page on dual-motion hybrid actuators.



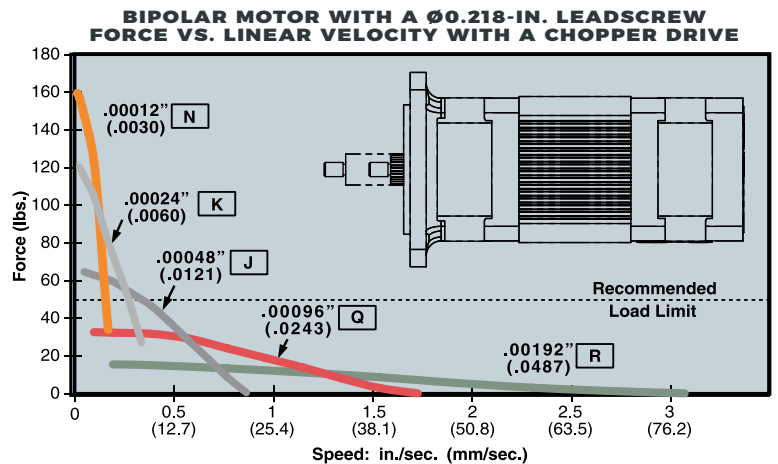
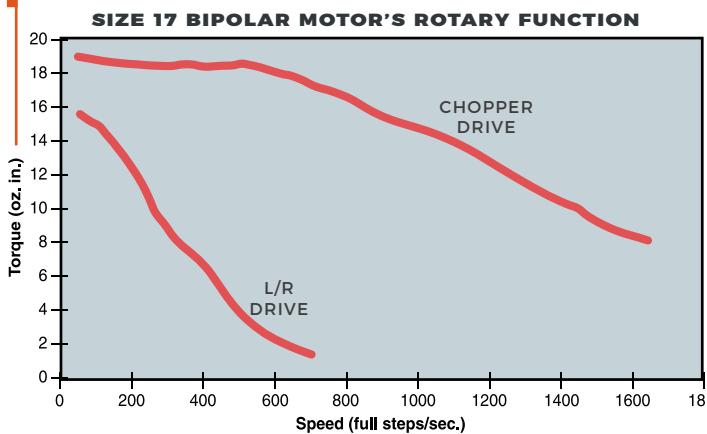
Haydon Kerk can custom manufacture dual-motion actuators to application requirements, and design engineers can set numerous operating parameters during integration ... as dual-motion actuators accept controls via standard two-axis stepper-motor drives, chopper drives, and microstepping drives.

Below is a chart of the capabilities of two Haydon Kerk dual-motion actuator models — the 35000 Series based on a Size 14 hybrid stepper motor and the 43000 Series based on a Size 17 hybrid stepper motor. Note that standard strokes are 1, 2, and 4 in. (25.4, 50.8, and 101.6 mm). Standard motors are Class B rated to 130° C.

COMPARISON OF 35000 AND 43000 SERIES ACTUATORS

Size (square)	Torque in Ncm	Linear stroke in mm	Maximum force	Travel per step in μm	Load limits
35 mm 1.4 in.	12.7	Up to 101.6	50 to 220 N	3 to 50	133 N 30 lb.
43 mm 1.7 in.	13	Up to 101.6	100 to 220 N	1.5 to 50	222 N 50 lb.

HAYDON KERK 43000 SERIES DUAL-MOTION ACTUATORS



Haydon Kerk 43000 Series (Size 17) dual-motion actuators deliver high load-carrying capacity. Values shown here are based on a 100% duty cycle for one suite of actuator variations. Customized adaptations abound.