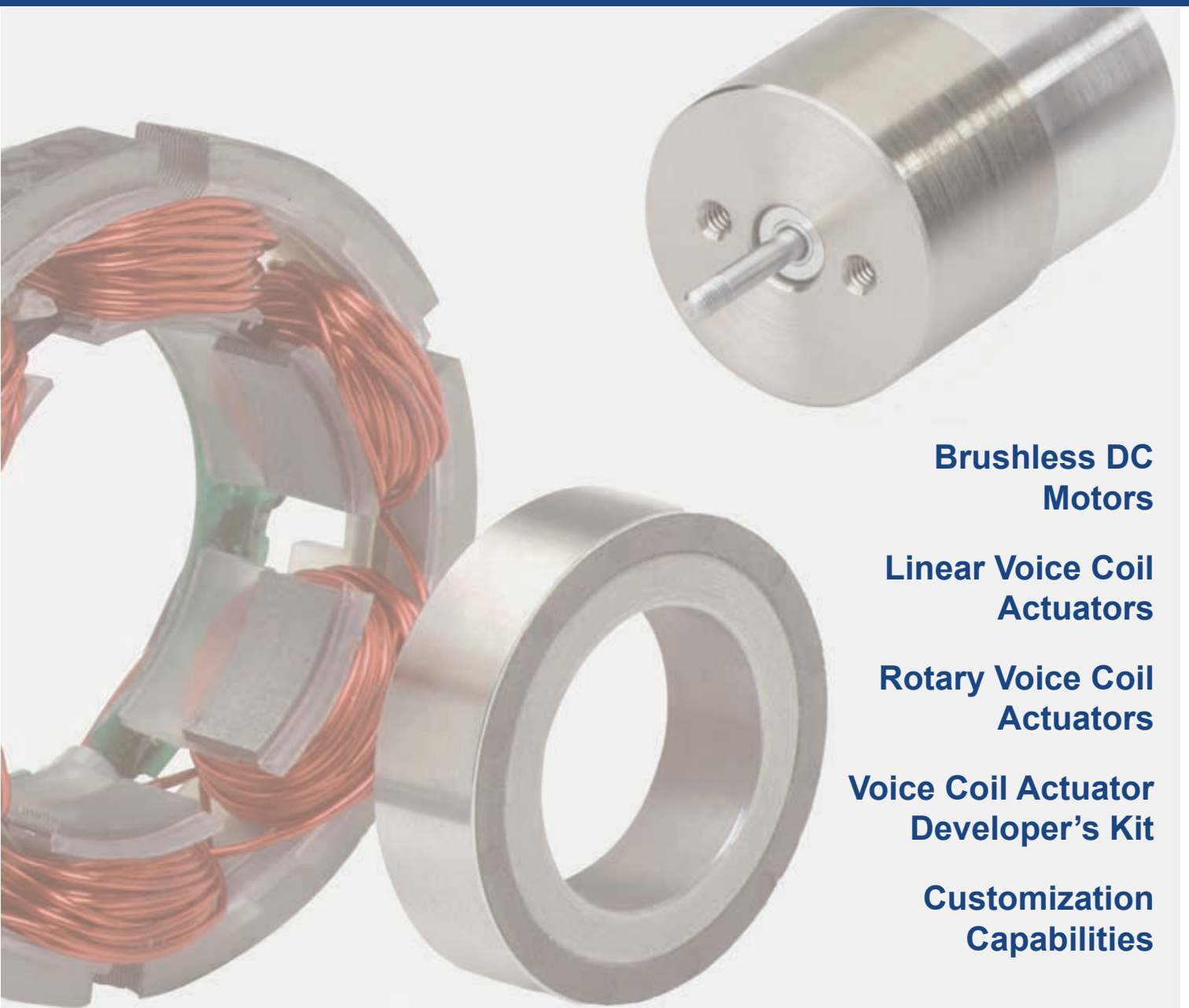




ADVANCED MAGNETICS FOR MOTION CONTROL HIGH PERFORMANCE ROTARY & LINEAR COMPONENTS



**Brushless DC
Motors**

**Linear Voice Coil
Actuators**

**Rotary Voice Coil
Actuators**

**Voice Coil Actuator
Developer's Kit**

**Customization
Capabilities**

EXPERT IN MAGNETICS

ABOUT BEI KIMCO

- > Founded in 1974 as Kimco Magnetics
- > Highly personalized applications expertise
- > Field Sales Representatives worldwide

QUALITY PRODUCTS

- > Value-added product line
- > Cost-efficient products
- > ISO 9001: 2000 standards
- > AS9100 C

EXTENSIVE CAPABILITIES

- > Custom design
- > Integrated solutions
- > Patented technologies
- > High Pressure High Temperature
- > Vacuum compatible

CUSTOMER BENEFITS

- > Complete model shop for rapid prototyping
- > Finite Element Analysis (FEA) and Computer Aided Design (CAD)
- > Engineering testing
- > Life testing facilities
- > Application engineering support

APPLICATIONS

INDUSTRIAL

- > Semiconductor Equipment
- > Optics
- > Lens Grinding
- > Downhole Drilling (MWD/LWD)
- > Test Equipment
- > Robotics
- > Haptic Feedback

MILITARY

- > Stabilization
- > Scanners
- > Targeting Systems
- > Gimbal Control
- > ROV Propulsion
- > UAV Thrusters

MEDICAL

- > Laboratory Equipment
- > Respirators/Ventilators
- > Oxygen Concentrators
- > Blood Diagnostics
- > Centrifuges
- > Pumps
- > Ultrasound Elastography



PRODUCT OVERVIEW

VOICE COIL ACTUATORS

Voice Coil Actuators (VCA) are direct-drive, cog-free devices used for providing highly accurate linear or rotary motion. The BEI Kimco Voice Coil Actuator line includes linear and rotary motion designs, multi-axis and spherical configurations and a moving magnet design.

Linear Actuators

- > Stroke greater than 100 mm
- > Force greater than 2500 N
- > Wide ranges of sizes available
- > Magnetic spring and latching capabilities
- > High precision and frequency
- > Custom design on demand
- > Long life and low friction
- > Cylindrical and rectangular designs
- > Frameless, semi-housed, and housed cylindrical VCAs



Part Number	Peak Force Newtons (N)	Continuous Stall Force Newtons (N)	Total Stroke Millimeters (mm)	Outside Diameter/Width Millimeters (mm)	Length at Mid-stroke Millimeters (mm)
LAH04-10-000A	1.89	1.11	4	10.16	25.4
LA05-05-000A	0.7	0.31	1.02	12.7	12.7
LA05-30-001Z	37.8	15.1	10	12	74
LA08-10-000A	6.67	1.96	4.06	19.05	24.51
LA10-12-027A	13.34	4.94	9.14	25.4	28.58
LA12-17-000A	44.48	15.57	7.62	30.48	43.18
LAH13-18-000A-3E	15.57	5.07	6.36	31.62	45.72
LA15-65-000A	66.72	18,9	101.6	38.1	165.1
LAH16-23-000A-4E	89	17	6.08	40	58.42
LA17-28-000A	71.17	28.47	15.24	58.42	66.04
LA18-12-006Z	44.48	15.12	6.1	44.45	28.4
LA19-40-000A	22.24	8.54	45.72	47.63	101.6
LA24-20-000A	111.21	26.33	16.51	60.33	50.8
LA28-22-000A	266.89	87.74	11.43	69.85	55.88
LAH28-53-000A-12E	266.89	60.1	25	70	132.7
LA43-67-000A	1378.9	282.91	31.75	107.95	169.93
LA50-65-001Z	1000.8	472.84	25.4	127	163.32
LA100-93-001A-50I	2447	1443	50.8	254	236.2

Linear Actuators with Feedback Sensor

- > Stroke greater than 32 mm
- > Force greater than 1500 N
- > Wide ranges of sizes available
- > Position sensor embedded
(Resolution $\geq 10 \mu$)



Part Number	Peak Force Newtons (N)	Continuous Stall Force Newtons (N)	Total Stroke Millimeters (mm)	Actuator Constant (N/ $\sqrt{\text{watt}}$)	Outside Diameter/Width Millimeters (mm)	Length at Mid-stroke Millimeters (mm)	Resolution Microns (μ)
LAS-13-18-000A-P01-3E	15.57	5.07	6.36	2.36	31.62 / 1.245	45.72	10
LAS13-54-001Z	26.13	7.1	12.8	2.98	31.75 / 1.25	137.16	20
LAS16-23-000A-P01-4E	89	17	6.08	5.83	40 / 1.575	58.42	10
LAS28-53-000A-P01-12E	266.9	60.1	25	13.09	70 / 2.76	132.7	40
LAS43-88-000A-P01-10E	1512.4	386.7	31.74	38.3	109.22 / 4.3	223.52	50

Voice Coil Actuator Developer's Kit

- > VCA with built-in feedback sensor
- > Programmable controller with motion control software
- > Complete control system
- > Direct-drive operation for highly accurate motion
- > Excellent resolution
- > Analog & digital inputs
- > Digital outputs with LEDs
- > Program examples



Rotary Actuators

- > Stroke greater than $\pm 60^\circ$
- > Torque greater than 20 Nm
- > Custom design available
- > Arc-segment and cylindrical designs
- > Various mechanical mounting options



Part Number	Peak Torque (Nm)	Continuous Stall Torque (Nm)	Total Excursion Angle (Degrees)	Actuator Constant (Nm/ $\sqrt{\text{watt}}$)	Width (mm)	Height (mm)
RA29-11-002A	0.226	0.093	32	0.031	27.43	45.21
RA54-18-000A	1.85	0.798	7.5	0.209	45.72	60.96
RA60-10-001A	0.8473	0.396	30	0.097	30.48	38.1
RA68-12-001A	1.2	0.649	20	0.158	30.22	45.21
RA68-19-000A	7.06	1.76	14	0.376	46.48	55.88

BRUSHLESS DC MOTORS

Housed fractional horsepower brushless DC motors have proven to be the most reliable and cost effective solutions for some of the most demanding applications. These motors are shipped ready to be integrated into customer applications easily and with minimal assembly time.

Housed BLDC Motors

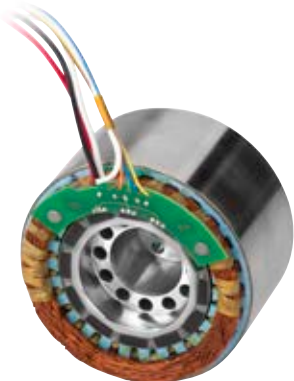
- > Wide ranges of sizes
- > Torque greater than 7Nm
- > Speed up to 30000 RPM
- > Power up to 10000 W
- > High temperature up to 205 °C with hall commutation
- > High pressure up to 2050 bars
- > Custom design available



Part Number	Peak Torque Newton-Meters (N-m)	Continuous Stall Torque (Nm)	Max Speed (RPM)	Diameter Millimeters (mm)	Axial Length Millimeters (mm)	Weight Grams (g)
DIH11-19-BDNA	0.056	0.025	18000	27.94	46.99	87.9
DIH15-60-200A	0.11	0.06	28000	31.8	152.4	941.2
DIH18-21-BBNA	0.021	0.007	14000	45.72	53.34	56.7
DIH23-22-BDNA	0.56	0.21	14000	57.15	55.88	527.3
DIH23-25-001A	0.7	0.22	14000	57.15	62.50	510.3
DIH30-25-BBNA	1.06	0.33	8000	76.20	63.50	952.5
DIN34-20-CDYA	0.85	0.35	18000	86.11	50.80	861.8
DIN34-32-CDYA	2.47	0.95	18000	86.11	81.28	1871.1
DIH40-33-DDYA	2.47	1.23	12000	101.60	83.82	2438.1

Frameless BLDC Motors

A frameless BLDC motor design, also known as a rotor/stator part set, allows for the motor to become fully integrated within the customer assembly resulting in the highest torque density available.



Part Number	Peak Torque Newton-Meters (N-m)	Continuous Stall Torque (Nm)	Max Speed (RPM)	Diameter Millimeters (mm)	Axial Length Millimeters (mm)	Weight Grams (g)
DIP10-11-002A	0.056	0.024	50000	25.4	25.65	62.4
DIP13-12-004A	0.17	0.52	10000	28.4	29.7	70.9
DIP16-08-008A	0.14	0.1	9550	40.1	20.3	68
DIP16-16-008A	0.14	0.10	7200	40.13	40.64	160.2
DIP18-22-001A	0.211	0.127	1000	40.13	47.75	283.5
DIP20-06-HPZ	0.099	0.030	14000	50.80	20.32	59.5
DIP24-11-001A	0.847	0.325	22700	60.35	28.44	263.6
DIP27-18-004A	0.706	0.296	12000	67.43	44.45	462
DIP30-007-001A	2.4	1.2	30400	75.8	38.20	212.6
DIP32-23-003A	2.82	1.02	6000	80.97	58.42	708.7
DIP37-12-024Z	1.136	0.355	8000	92.08	28.96	1134
DIP38-18-001A	3.5	2.68	650	94.74	48.51	1134
DIP50-16-001A	8.47	4.23	500	127	40.64	2012.8
DIP50-24-001A	6.75	7.94	450	127	60.96	2976.7
DIP67-08-001A	0.211	0.035	5000	168.14	20.82	396.9

*The product list is not exhaustive.

BEI KIMCO

ABOUT BEI KIMCO

BEI Kimco specializes in the design and manufacture of high performance rotary and linear motion components, including Brushless DC Motors and Voice Coil Actuators. These products are designed for applications where performance, precision, and reliability are critical. Using proprietary magnetic design methodologies, BEI Kimco has the ability to produce custom, cost efficient products within multiple manufacturing locations. BEI Kimco is a leader in medical, industrial, aerospace & defense markets. BEI Kimco is a brand of Sensata Technologies.

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