

**KOCO**  
DC-MOTION



## HOT PRODUCTS

# PRECISION DC CORELESS MOTORS & BRUSHLESS DC MOTORS



BLDC Outer Runner

BLDC Interior Rotor

BLDC Integrated Driver

BLDC with Encoder

DC Core Motor

Precision DC Coreless Motor

Planetary Reduction Gear Motor

Mini Step Motor

## ABOUT KOCO DC-MOTION

**KOCO DC-MOTION, Inc.** is a California, U.S. Corporation jointly owned by **CONSTAR MICROMOTOR CO, Ltd. of China** and **KOCO MOTION GmbH of Germany**. The company is a full service base of operations providing Application Engineering and Sales support to our North America customers.

**Constar Micromotor Co., Ltd.** is a high-tech motor design and manufacturing enterprise with headquarters in Shenzhen, China. The company has two manufacturing facilities: The Shenzhen Baoan Micromotor Factory and the Chongqing Fuling Micromotor Factory, with a combined total area of 70.000 square meters and with 1200 employees.

Constar puts a premium emphasis on continued research and development, and seeks to hire top talent senior specialists in the mechanical and electrical/ electronic engineering fields.



◀▲ Constar Micromotor Co., Ltd, Shenzhen, China

Constar's present manufacturing capacity is 100 million motors per year. Constar is competitive and supplies a high value product. The company has Global Brand Recognition in their primary markets such as: medical and healthcare devices, industrial automation and robotics, automotive, digital cameras, chemical analysis machines, security devices, avionics, optical instruments, portable construction devices, and certain military applications.

The company also participates on a joint Sino-Japanese development team. The Company has achieved technical breakthroughs in the field of motor design and manufacturing and holds many patents in its industry. Constar firmly believes that innovation and continued development is essential for success in the Global Economy with its new opportunities and challenges.

**As a result of Constar's commitment to performance they have been awarded the following certifications:**

- ▶ **ISO9001** for accuracy, quality, workmanship, and systemized manufacturing work flow.
- ▶ **TS 16949** for quality management system and methods.
- ▶ **ISO14001** for environmental management.

**KOCO MOTION GmbH** is located in Dauchingen, Germany, a town in the well known Black Forest region. The company is a manufacturer and distributor of small flat DC motors and special brushless DC motors (BLDC motors) as well as highly integrated motion control products.



▲ KOCO MOTION GmbH, Germany

The company has a close working relationship with Constar Micromotor Co. and has been importing and marketing their products in Europe. This, when considered together with the in-depth knowledge of motor manufacturing and markets held by KOCO MOTION, is a solid foundation for the jointly owned **KOCO DC-MOTION, Inc. in the United States.**



▲ KOCO DC-MOTION, Inc., California

# PRODUCTS

## DC MOTORS & BLDC MOTORS

The DC motors cover the power range of 0.06 to 1.670 Watts and include both "brush" and "brushless" (BLDC) types. The brush types include both "ironcore rotor" and "ironless rotor" DC motors. The "ironless" motors are usually referred to as "Micromotors".

Micromotors are especially useful in applications requiring linear characteristics, maximum efficiency, and small space. BLDC motors are particularly known for long life as there are no brushes and commutators to wear out since the motor commutation is done electronically and usually contain Hall sensors to determine commutation timing.



**BRUSHLESS DC MOTOR** (Interior Rotor)



**DC CORE MOTOR** (Vibration)



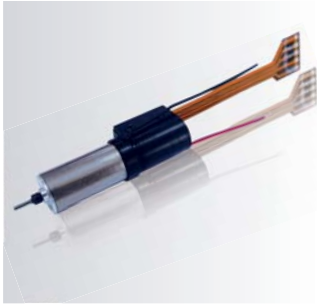
**MICRO DC CORELESS MOTOR** (Driving Series)



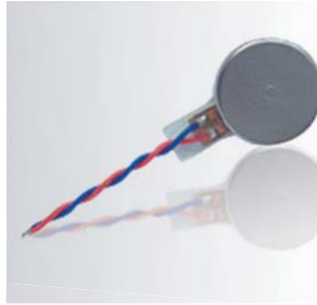
**MINI STEP MOTOR** (Permanent Magnet)



**DRIVING SYSTEM**



**SERVO SYSTEM** (Precious Metal brush)



**FLAT DC MOTOR** (Vibration)



**FLAT DC MOTOR** (Driving Series)

## PRECISION DC CORELESS MOTORS



## BRUSHLESS DC MOTORS

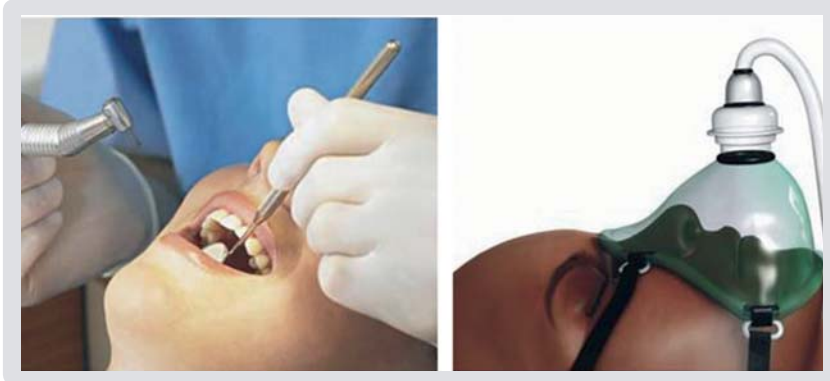


# APPLICATION FIELDS

Globally recognized Micromotor manufacturer supplies professional individual solutions

## PRECISION DC CORELESS MOTORS

The product features compact size, high efficiency, long operational lifetime, low vibration, little electromagnetic interference, excellent servo performance



## BRUSHLESS DC MOTOR

The product features compact size, high efficiency, long operational lifetime, low vibration, little electromagnetic interference, excellent servo performance

## DRIVING SYSTEM

Constar motors can be equipped with a corresponding precision gear box, encoder and controller providing a custom drive system.



## SERVO SYSTEM

Constar servo systems consists of precision DC coreless motor (or brushless motor), high resolution optical encoder and gear box, featuring high resolution, high sensitivity and excellent controllability.

# PRECISION DC CORELESS MOTORS

Coreless and an inclined winding structure is adopted for Constar precision DC coreless motor. Thanks to the symmetrical winding, the motor is well balanced, vibration free and stable running. The integrated structure of winding, commutator and motor shaft, results in a motor that is characterized by: low rotor inertia, rapid rotation speed, high efficiency, little electromagnetic interference, long operational lifetime, linear output performance, convenient speed regulation and excellent servo performance.

High performance Nd-Fe-B magnet is used resulting in compact product size.

The motor with precious metal commutation is used for occasions of low-power requirements and the motor with carbon-brush commutation structure can be chosen for occasions of high output power and increased operational lifetime. The product is applicable for precision driving applications in medical, health care, analytical equipment, video lens axis control, and industrial automation, to name just a few.



Article No.	Diameter mm	Length mm	Power range W	Torque range rated mNm	Voltage range V	See Catalog page
M21	∅ 18	8.7	0.17 – 0.22		3.0 – 24.0	4
2007N6M-	∅ 20	7.2	0.32 – 0.48	0.3 – 0.35	3.0 – 4.5	5
0612N5M-	∅ 6	12.0 – 15.0	1.4 – 2.3	0.27 – 0.59	1.5 – 6.0	6
Gearbox type PGM06-	∅ 6	13.0 – 23.4	0.16 – 0.5	0.07 – 0.59	1.5 – 6.0	7
0716N5M-	∅ 7	16.6	0.41 – 0.51	0.15 – 0.2	3.0 – 6.0	8
0816N5M-	∅ 8	16.25	0.32 – 0.38	0.19 – 0.2	4.5 – 9.0	8
Gearbox type PGM08-	∅ 8	11.6 – 22.4	0.32 – 0.38	0.19 – 0.2	4.5 – 9.0	10
1020N5M-	∅ 10	20.0	0.47 – 1.13	0.25 – 0.45	3.0 – 4.5	11
1221N5M-/1231N5M-	∅ 12	21.0 – 30.8	1.1 – 1.8	1.0 – 2.0	6.0 – 12.0	12
Gearbox type PGM12-	∅ 12	12.7 – 25.9			6.0 – 12.0	13
1517N5M-	∅ 15	17.0	1.8	2.0	6.0	14
1627N5M-	∅ 16	26.6	3.38 – 4.5	2.5 – 3.5	4.5 – 12.0	15
1627N5M-	∅ 16	30.0	0.64 – 2.77	1.4 – 3.0	3.0 – 12.0	16
Gearbox type PGM16-	∅ 16	15.1 – 29.7	3.38 – 4.24	2.5 – 3.5	4.5 – 12.0	17
1720N5M-	∅ 17	20.0	1.2 – 2.81	1.2 – 2.0	3.0 – 12.0	18
2020N5M-	∅ 20	20.0	1.0 – 1.73	1.3 – 1.6	3.0 – 12.0	19
2233N5M-	∅ 22	33.2	5.0 – 9.57	5.0 – 8.0	3.0 – 9.0	20
Gearbox type PGM22-	∅ 22	23.3 – 48.1	5.0 – 9.57	5.0 – 8.0	3.0 – 9.0	21
2543N9C2B-	∅ 25	43.5	21.6	22.0	12.0	22
1027N3M-EN-	∅ 9	31.5	0.32	0.19	9.0	23
1032N3M-EN-	∅ 10	27.0	0.47	0.25	4.5	24
1232N5M-EN-	∅ 12	32.0	1.3	1.0	12.0	25
1243N5M-EN-	∅ 12	43.0	1.1	1.7	12.0	26
1639N5M-Encoder	∅ 16	39.3	2.8	3.0	12.0	27
GH0607F-	∅ 6	16.0		0.19	3.0	28

# BRUSHLESS DC MOTORS

Electronic commutation is used to replace mechanical commutation on Constar brushless DC motors, which overcomes fatal weak points of DC motors with contact-type mechanical commutation. The Constar BLDC motor has extremely long operational lifetime.



Top performance of the motor also lies in its excellent reliability, high rotation speed, small size, high overloading capability and little electromagnetic interference. It has good speed regulating performance and it can work in a poor environment as well.

The motor is applicable in the fields such as: medical equipment, industrial equipment, Drones, electrical tools and mini household appliances, and the extra-thin brushless series can also be applied for vibration of mobile phones and driving of mini toys.

Article No.	Diameter mm	Length mm	Power range W	Torque range rated mNm	Voltage range V	See Catalog page
B1215N2B- B1220N2B-	Ø 12	15.0 – 20.0	0.7 – 4.9	0.5 – 1.17	3.7 – 7.4	4
B1230N2B-	Ø 12	30.0	3.4 – 68.0	3.4 – 10.0	12 – 14	5
B1635N2B-	Ø 16	35.0	33.5	7.8	12	6
B2030N2B-	Ø 20					7
B2040N2B-	Ø 20	30.0 – 40.0	2.7 – 45.0	5.9 – 12.0	12	8
B02316N2B-	Ø 23	16.0	29.5	17.0	10.5	9
B02818N2B-	Ø 28	17.5	41.5	22.0	12	10
B02821N2B-	Ø 28	21.0	13.9	35.0	15	11
B02826N2B-	Ø 28	26.6	93.0	84.0	12	12
B02828N2B-	Ø 28	28.0	76.3	78.7	12	13
B02914NH2B-	Ø 29	14.0	5.9	12.0	24	14
B2940N2B-	Ø 29					15
B2950N2B-	Ø 29					16
B3336NH2B-	Ø 33	35.5	138.0	13.4	12	17
B03831NH2B-	Ø 38	30.5	171.0	378.0	24	18
B05540NH2B-	Ø 55	39.3	102.0	58.7	24	19
B1242N2B- with Encoder	Ø 12	42.0	3.4	3.4	14	20
B1647N2B- with Encoder	Ø 16	47.0	5.0	5.0	6	21
B2045NH2B- with Encoder	Ø 20	62.0	11.1	10.0	12	22
42ZWX-	Ø 42	40.5 – 80.5	25.2 – 74	63 – 185	24	23
57ZWX-	Ø 57	56.0 – 96.0	44.0 – 128	110 – 320	36	24
60ZWX-	Ø 60	61.5 – 121.5	44.0 – 176	110 – 440	36	25
62ZWX-	Ø 62	64.0 – 104.0	70.4 – 195	220 – 650	36	26
80ZWX-	Ø 80	103.0 – 143.0	132 – 310	400 – 1000	36	27
86ZWX-	Ø 86	87.0 – 137.0	300 – 737	1000 – 2500	48	28
110ZWX-	Ø 110	83.0 – 173.0	417 – 1670	1650 – 6600	300	29
130ZWX-	Ø 130	10.0 – 165.0	300 – 900	2000 – 6000		

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