



KOCO
Group



HOT PRODUCTS

A VARIETY OF APPLICATIONS



PRECISION DC CORELESS MOTOR
BRUSHLESS DC MOTOR
ELECTRONIC SPEED CONTROLLER
PRECISION GEARMOTOR
PRECISION SERVO MOTOR
DC CORELESS MOTOR
FLAT DC MOTOR
DC CORE MOTOR
MINI STEP MOTOR
SONIC MOTOR

...Intelligence in motion

ABOUT KOCO MOTION INDIA



KOCO MOTION INDIA is a joint venture company owned by **Inteltek Automation** and **KOCO MOTION GmbH** of Germany. The company is a full service base of operations providing Application Engineering and Sales support to our India customers.

Inteltek Automation is at the forefront of industrial automation in India for over 25 years now. We offer complete automation solutions from concept to commissioning. Our ties with global leaders in automation components and controls helps us to meet wide ranging application needs. Whatever be your specific requirement, we can provide you a unique solution advantageous to you.

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 INDIA**



▲ **KOCO MOTION GmbH and KOCO automotive GmbH, Germany**

KOCO DC-MOTION, Inc located at a California, USA is also a part of KOCO MOTION GROUP. This company is jointly owned by Constar Micromotor Co., Ltd. and KOCO MOTION GmbH of Germany.

The companies in KOCO MOTION GROUP working closely to cater to the market requirements from Europe, USA and India, with the in-depth knowledge of motor manufacturing and market segments.



▲ **KOCO MOTION GROUP Team**

With the combination of World Class Components, Good Application Engineering and System Integration Expertise, KOCO MOTION Group offers Innovative Solutions by adopting the state of the art technologies.

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.

Constar Micromotor Co., Ltd. is a hightech motor design and manufacturing enterprise with headquarters in Shenzhen, China. The company has two manufacturing facilities: The Shenzhen GuangMing 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 & development, and seeks to hire top talent senior specialists in the mechanical and electrical/ electronic engineering fields.



Constar Shenzhen Factory ▶



▲ **Constar Chongqing Factory, China**



▲ **One of Constar automated production lines**

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 avionic applications.

The company also works jointly with Sino-Japanese development team for product designs. 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.

PRODUCTS

DC MOTORS AND 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 “iron core 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)



DC GEAR MOTOR



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 windings are utilized in our precision DC coreless motors (Micromotors). Due to an integrated structure consisting of a symmetrical winding, commutator and motor shaft, these motors run very smoothly and stably without any vibration. The motors are characterized by:

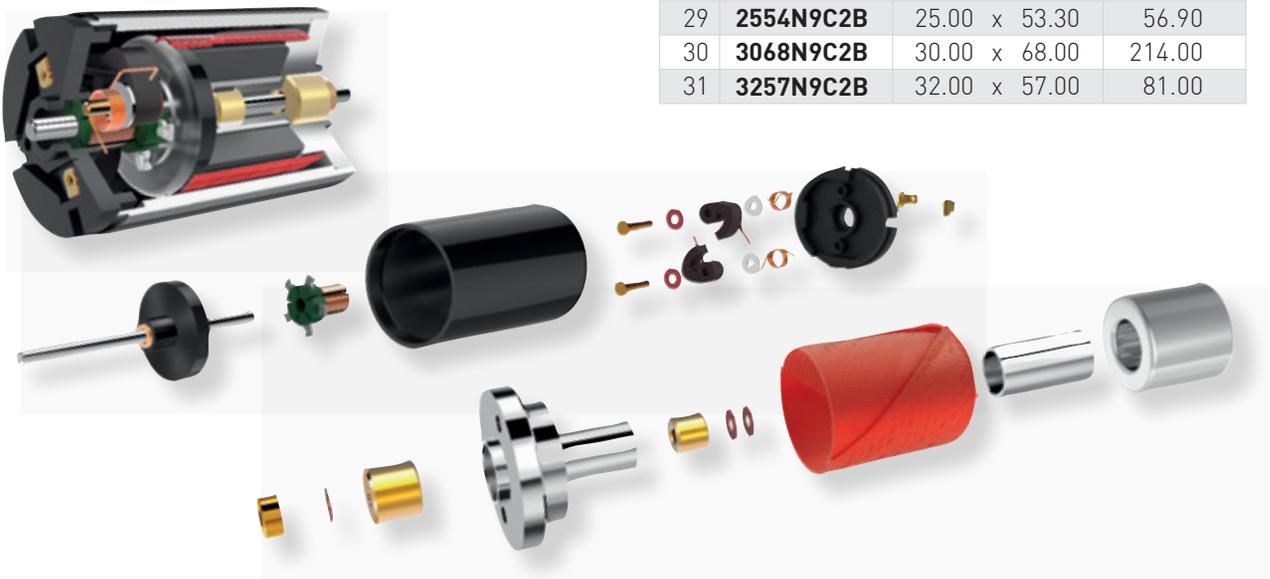
- **low inertia**
- **rapid acceleration**
- **high efficiency**
- **no cogging and linear output performance**

They have excellent speed regulation and servo performance. High performance Nd-Fe-B magnets are used, and the product is compact in size. The motor with precious metal commutation is used in low power applications, whereas carbon-brush commutation is used in higher power applications with long operational lifetime. The product is typically used for precision drives in medical equipment and devices, healthcare products, robotics, automotive, and industrial automation.

Typical applications

Precision drives in medical, healthcare, robotics, automobile and industrial automation fields, nail gun, etc.

	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	0615N5M	6.00 x 15.00	0.83
2	0816N5M	8.00 x 16.20	0.34
3	1020N5M	10.00 x 20.70	4.04
4	1025N5M	10.00 x 24.00	1.59
5	1221N5M2B	12.00 x 21.00	1.96
6	1221N7M	12.00 x 21.00	2.00
7	1230N5M	12.40 x 30.80	3.40
8	1230N7M	12.40 x 30.80	6.23
9	1331N5M	13.00 x 31.50	2.23
10	1515N5M	15.00 x 15.20	5.14
11	1620N5M	16.00 x 20.00	3.43
12	1625N5C	16.00 x 25.60	2.60
13	1625N5M	16.00 x 25.20	2.89
14	1625N9M	16.00 x 25.20	2.60
15	1627N5M(1)	16.00 x 27.00	4.90
16	1627N5M(2)	16.00 x 27.00	3.00
17	1630N5C	16.00 x 30.00	12.40
18	1630N5M2B	16.00 x 30.00	4.10
19	1735N5C2B	17.00 x 35.00	6.80
20	1925N9M	19.00 x 25.00	5.00
21	2224N5M2B	22.00 x 24.00	17.70
22	2225N5M	22.00 x 25.30	6.10
23	2232N5M	22.00 x 31.60	8.30
24	2232N9M	22.00 x 31.60	8.30
25	2232N5M2B	22.00 x 31.60	5.00
26	2233N5C	22.00 x 33.70	24.30
27	2433N5M2B	24.00 x 32.80	10.10
28	2543N9C2B	25.00 x 43.50	52.90
29	2554N9C2B	25.00 x 53.30	56.90
30	3068N9C2B	30.00 x 68.00	214.00
31	3257N9C2B	32.00 x 57.00	81.00



BRUSHLESS DC MOTORS

The brushless dc motor (BLDC) utilizes electronic commutation instead of mechanical commutation which overcomes the weaknesses of contact-type (brush) commutation, while providing excellent reliability and extremely long service life. Attributes of the motor's excellent performance include:

- high reliability
- high rotational speed
- excellent size to power ratio
- high short-term overload capability
- low EMI
- good speed regulation
- ability to operate in certain poor environment conditions

These motors are frequently used in application fields such as medical equipment, robotics, industrial equipment, UAV, electrical tools, and small household appliances.

Typical applications

Precision drives in medical equipment, industrial automation fields, Aeromodelling, UAV gimbals and handheld gimbals, etc.



	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	B1020N	10.00 x 20.00	11.50
2	B1215N2B	12.00 x 15.00	4.60
3	B1220N2B	12.00 x 20.00	3.30
4	B1230N2B	12.00 x 30.00	7.80
5	BH0831NH	8.00 x 31.00	6.00
6	BH1659NH2B	16.00 x 58.60	488.00
7	BH2245NH2B	22.00 x 45.00	717.00
8	BH2260NH2B	22.00 x 59.70	1242.00
9	B1329N2B	13.00 x 29.00	4.20
10	B1635N2B	16.00 x 35.00	100.00
11	BS1635NB2B	16.00 x 35.00	4.00
12	B2040N2B	20.00 x 40.00	31.00
13	BS2835NB2B	28.00 x 35.00	88.00
14	B1233NH2B	12.00 x 32.80	10.00
15	B1250NH2B	12.70 x 50.00	9.00
16	BS1635NBH2B	16.00 x 35.00	6.00
17	B2440NH2B	24.00 x 40.00	56.00
18	B2950NH2B	29.00 x 50.00	105.00
19	BS3240NBH2B	31.00 x 40.00	6.00
20	B3265NH2B	32.00 x 65.00	215.00
21	B4040NH2B	40.00 x 43.30	52.60
22	BO1511N2B	14.20 x 11.00	29.00
23	BO1613N2B	16.00 x 13.30	12.00
24	BO1815N2B	18.00 x 14.50	49.00
25	BO2316N2B	22.80 x 15.00	79.00
26	BO2814N2B	27.60 x 14.30	84.00
27	BO2820N2B	27.60 x 20.10	263.00
28	BO2824N2B	27.70 x 24.00	198.00
29	BO2826N2B	27.60 x 25.80	254.00
30	BO2828N2B	27.70 x 29.50	395.00
31	BO3518N2B	35.00 x 18.50	103.00
32	BO3823N2B	37.60 x 23.00	318.00
33	BF3211N2B	32.00 x 11.20	8.00
34	BO3828NB2B	37.10 x 27.60	93.00
35	BO4830N2B	48.00 x 30.00	560.00
36	BO6133N2B	61.20 x 33.00	749.00
37	BO8724N2B	87.00 x 22.30	1892.00
38	BO1410NB2B	14.20 x 9.60	0.60
39	BO1509NBH2B	15.50 x 8.30	3.20
40	BO1709NB2B	17.00 x 9.50	5.20
41	BO1808NBH2B	17.50 x 8.90	1.60
42	BO2008NBH2B	20.00 x 8.90	1.00
43	BO2010NB2B	20.00 x 10.00	15.00
44	BO2015NB2B	21.20 x 15.20	9.00
45	BO2414NB2B	24.50 x 13.90	7.80
46	BO3216NB2B	31.50 x 15.90	32.70
47	BO3518NB2B	34.50 x 18.00	3.30
48	BO4316NB2B	43.20 x 16.40	37.00
49	BO2914NBH2B	46.00 x 43.00 x 14.00	13.70
50	BO4326NBH2B	42.80 x 27.00	711.00
51	BO6452N3B	63.00 x 52.00	1765.00
52	B2040NIE2B	20.00 x 40.00	0.18
53	B2135NIE2B	21.00 x 35.00	2.00
54	B7584FBHIE2B	75.00 x 84.00	49.00

ELECTRONIC SPEED CONTROLLER

The electronic speed controller has specifically designed software and hardware utilizing high quality materials and components. It is a high efficiency SMART controller that is

- **easy to operate**
- **has a low temperature rise**
- **low electromagnetic interference**
- **is designed for optimum use with our motors**

The controller can also be provided with customized ESC including closed-loop control

Typical applications

- CPAP machines
- Medical Injection Pumps
- Electrical tools
- Pumps
- Blowers
- Multi-rotor drones

	Characteristics		BL_S 20A	BL_S 30A	X310	X420
1	Contant current	A	20	30	10	20
2	Peak current (10 s)	A	30	40	20	30
3	LiPo		2 - 4 S	2 - 4 S	2 - 3 S	2 - 4 S
4	BEC		No	No	No	No
5	Weight	g	< 5.1	< 5.8	< 8.2	< 18.2
6	PCB size	mm	14.5*26	14.5*26	16.5*28	22*32



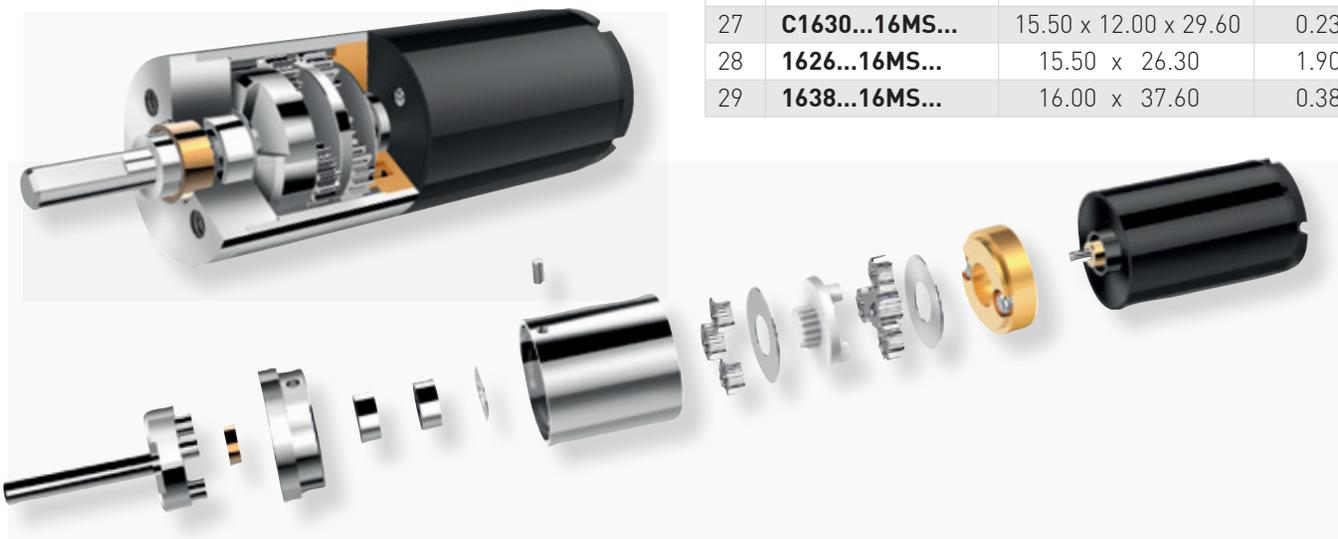
PRECISION GEARMOTORS

Precision gearboxes, of various structural configurations and a range of gear ratios, are available for mounting to a chosen drive motor thus providing speed reduction at increased torque. Depending upon the final output torque and the drive motor size, gearboxes are available in both spur gear and planetary gear configurations. These precision gearmotors are widely used in the fields of medical equipment, scientific instruments, security systems and locks, industrial equipment, personal healthcare products, audio and visual products, and high-end hobby products.

Typical applications

Precision control fields such as medical instruments, industrial control, medical equipment, security equipment, audio and visual products, high-end hobby applications, personal healthcare products, etc.

	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	06**...06MP...	6.00 x 31.90	0.07
2	08**...08MP...	8.00 x 38.80	0.24
3	10**...10MP...	10.00 x 43.30	0.39
4	12**...12MP...	12.40 x 62.70	2.30
5	12**...13MP...	13.00 x 60.10	2.30
6	16**...16MP...	16.00 x 56.65	1.47
7	22**...22MP...	22.00 x 81.30	5.49
8	25**...25MP...	25.00 x 85.70	21.25
9	29**...29MP...	29.00 x 100.50	43.00
10	32**...32MP...	32.00 x 112.70	19.29
11	B043**...42MP...	43.00 x 87.00	156.68
12	B048**...52MP...	48.00 x 100.80	98.48
13	B061**...62MP...	61.20 x 113.30	237.16
14	L0616...06PP...	6.00 x 15.80	0.02
15	C1020...10PP...(1)	10.00 x 19.50	0.08
16	C1020...10PP...(2)	10.00 x 19.50	0.08
17	C1020...10PP...(3)	10.00 x 19.50	0.08
18	C1238...12PP...(1)	12.00 x 37.80	0.29
19	C1222...12PP...	12.00 x 22.10	0.11
20	C1228...12PP...	12.00 x 27.80	0.20
21	C1238...12PP...(2)	12.00 x 37.80	0.43
22	S15**...12MS...	15.00 x 21.90	
23	C12**...12MS...	10.00 x 12.00 x 26.10	0.31
24	C12**...14MS...	14.00 x 26.10	0.31
25	C1630...13MS...	15.50 x 12.00 x 29.60	0.73
26	C1631...14MS...	15.50 x 12.00 x 30.60	0.23
27	C1630...16MS...	15.50 x 12.00 x 29.60	0.23
28	1626...16MS...	15.50 x 26.30	1.90
29	1638...16MS...	16.00 x 37.60	0.38



PRECISION SERVO MOTORS

The PRECISION SERVO MOTOR is highly reliable and delivers excellent performance over extremely long lifetime. The motor produces high rotation speed with good speed regulation and low EMI. The motor has high short-term overload capacity and can operate in certain poor environment conditions. Frequent applications markets are medical/surgical equipment, robotics, industrial automation, UAV, electric tools, and small consumer appliances.

	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	0837M5**M**	8.00 x 37.00	0.13
2	1043M5**M**	10.00 x 43.00	0.76
3	1238M7**M**	12.00 x 38.00	0.57
4	1654C5**M**	16.00 x 54.00	2.11
5	2281C5**M**	22.00 x 81.00	7.20
6	2581C9**M**	25.00 x 81.00	14.57

Typical medical applications

- Insulin pumps
- MLC radiation therapy
- Blood analyzers
- Automated medicine dispensers
- Medical gimbal cameras
- Intelligent prostheses



DC CORELESS MOTORS

Utilizing precious metal brushes, high performance Nd-Fe-B magnet, small gauge high strength enamelled winding wire, the motor is a compact, light weight precision product. This high efficiency motor features low starting voltage and low power consumption. As a drive motor, some typical applications include small household appliances, mini UAV's, and remote control hobby products. The motor also provides the vibration function in wearable healthcare equipment, mobile phones and tablet PC's.

Typical applications

Mini UAV, remote control actuators, aerocrafts, mini household appliances, wearable devices, mobile phones, tablet PCs, healthcare equipment, etc.

	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	L0408N3M	4.08 x 8.00	0.16
2	L0410N3M	4.08 x 10.10	0.19
3	L0412N3M	4.08 x 12.10	0.36
4	L0510N3M	5.00 x 9.80	0.22
5	L0609N3M	6.00 x 9.00	0.22
6	L0610N5M	6.00 x 10.40	0.90
7	L0612N3M	6.00 x 12.20	0.70
8	L0612N5M	6.00 x 12.20	1.80
9	L0614N5M	6.00 x 13.90	1.40
10	L0615N5M	6.00 x 15.00	1.10

	Motor No.	Dia x Length (max) in mm	Max. Power in W
11	L0710N5M	7.00 x 10.20	1.90
12	L0714N5M	7.00 x 14.10	1.30
13	L0716N5M	7.00 x 16.70	4.20
14	L0720N5M	7.00 x 20.00	4.10
15	L0816N5M	8.00 x 16.00	1.59
16	L8.520N5M	8.50 x 20.00	7.93
17	L0820N5M	8.00 x 20.00	7.08
18	L8.523N5M	8.50 x 23.20	5.96
19	L1013N3M	10.00 x 13.00	0.40
20	L1015N5M	10.00 x 15.00	1.90
21	L1020N5M	10.00 x 20.70	17.40
22	L1212N5M	12.00 x 12.30	2.70
23	L1213N5M	12.00 x 13.00	2.20
24	L1215N5M	12.00 x 14.60	5.00
25	L1416N5M	14.00 x 16.30	2.20
26	L1515N5M	15.00 x 15.20	8.50
27	L1620N5M	16.00 x 19.60	1.60
28	L1625N5M	16.00 x 25.50	2.80
29	L1630N5M	16.00 x 30.00	6.40
30	L1718N5M	17.40 x 18.10	11.30
31	L1722N5M	17.40 x 22.10	19.70
32	L2233N5M	22.00 x 33.00	7.00
33	VL0408N3M	4.08 x 8.00	Vibration
34	VL0510N3M	5.00 x 9.80	Vibration
35	VL0610N5M	6.00 x 10.40	Vibration
36	VL0612N3M	6.00 x 12.20	Vibration
37	VL0614N5M	6.00 x 13.90	Vibration
38	VL0615N5M	6.00 x 15.20	Vibration
39	VL0716N5M	7.00 x 16.70	Vibration
40	VL1015N3M	10.00 x 15.00	Vibration



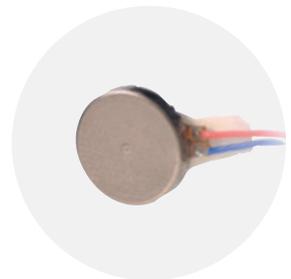
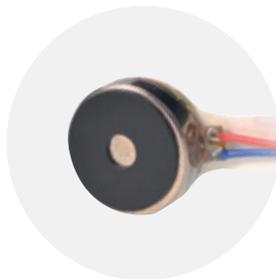
FLAT DC MOTORS

The flat DC motor features a unique and practical design structure. The motor was awarded second prize for technological progress in a contest held in Shenzhen and was also granted a national patent. The motor is well suited for electronic products with limited space. Due to its small size and available built-in vibrator, the product is widely used in wearable healthcare products, mobile phones, and tablet PC's.

Typical applications

Intercom systems, gamepads, wearable devices, mobile phones, tablet PCs, healthcare equipment, mini electronic products, high-end hobby applications, etc.

	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	2007RFN	20.00 x 7.20	1.6
2	0720RFN	7.00 x 2.10	
3	0820RFN	8.00 x 2.00	
4	0827RFN	8.00 x 2.70	
5	0834RFN	8.00 x 3.40	
6	1020RFN	10.00 x 2.00	
7	1027RFN	10.00 x 2.70	
8	1030RFN	10.00 x 3.00	
9	1034RFN	10.00 x 3.40	
10	1234RFN	12.00 x 3.40	



DC CORE MOTORS

As the name implies, this motor contains an iron core over which the winding is made. The product features stable and reliable performance. For heavy load applications requiring long operational life, a carbon brush structure is available. The drive motor series are widely used in applications of security equipment, small electronic products, remote control model aircraft, personal care products, and portable electric tools. The motor is also available in a vibration series which are widely used in communication devices and healthcare equipment.

Typical applications

Automotive products, breast pumps, power tools, mini electronic products, portable tools, security equipment, remote control aerocrafts, personal care products, etc.

	Motor No.	Dia x Length (max) in mm	Max. Power in W
1	C1012F	10.00 x 8.00 x 12.60	0.84
2	C1015F	10.00 x 8.00 x 15.00	0.70
3	C1212F	12.00 x 10.00 x 12.00	0.52
4	C1215F	12.00 x 10.00 x 15.60	1.18
5	C1220F	12.00 x 10.00 x 20.60	1.75
6	C1627F	15.50 x 12.00 x 26.90	0.85
7	C1718R	17.00 x 17.80	3.71
8	C1723R	17.00 x 22.80	3.85
9	C2430R	24.40 x 30.80	3.91
10	C2032F	20.30 x 15.50 x 32.00	2.10
11	C2838R	28.00 x 38.00	22.41



MINI STEP MOTORS

The mini step motor features a rational permanent magnet (PM) design. In an open loop system the motor performs very reliably with good positioning precision and repeatability. When properly matched with driving electronics, various incremental steps can be achieved (half step, micro steps).

Typical applications

Security systems, office automation systems, medical equipment, mini household appliances, high-end hobby applications, etc.

	Motor No.	Dia x Length (max) in mm	Max. Torque in mNm
1	1011P0209	10.00 x 10.30	0.40
2	1511P0209	15.00 x 11.60	1.00
3	3515P0489	35.00 x 15.00	10.00

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SONIC MOTORS

Our Sonic Motor, featuring novel design and ingenious structure, was granted a national patent.

This remarkable product is characterized by low noise, high frequency, high torque, long lifetime.

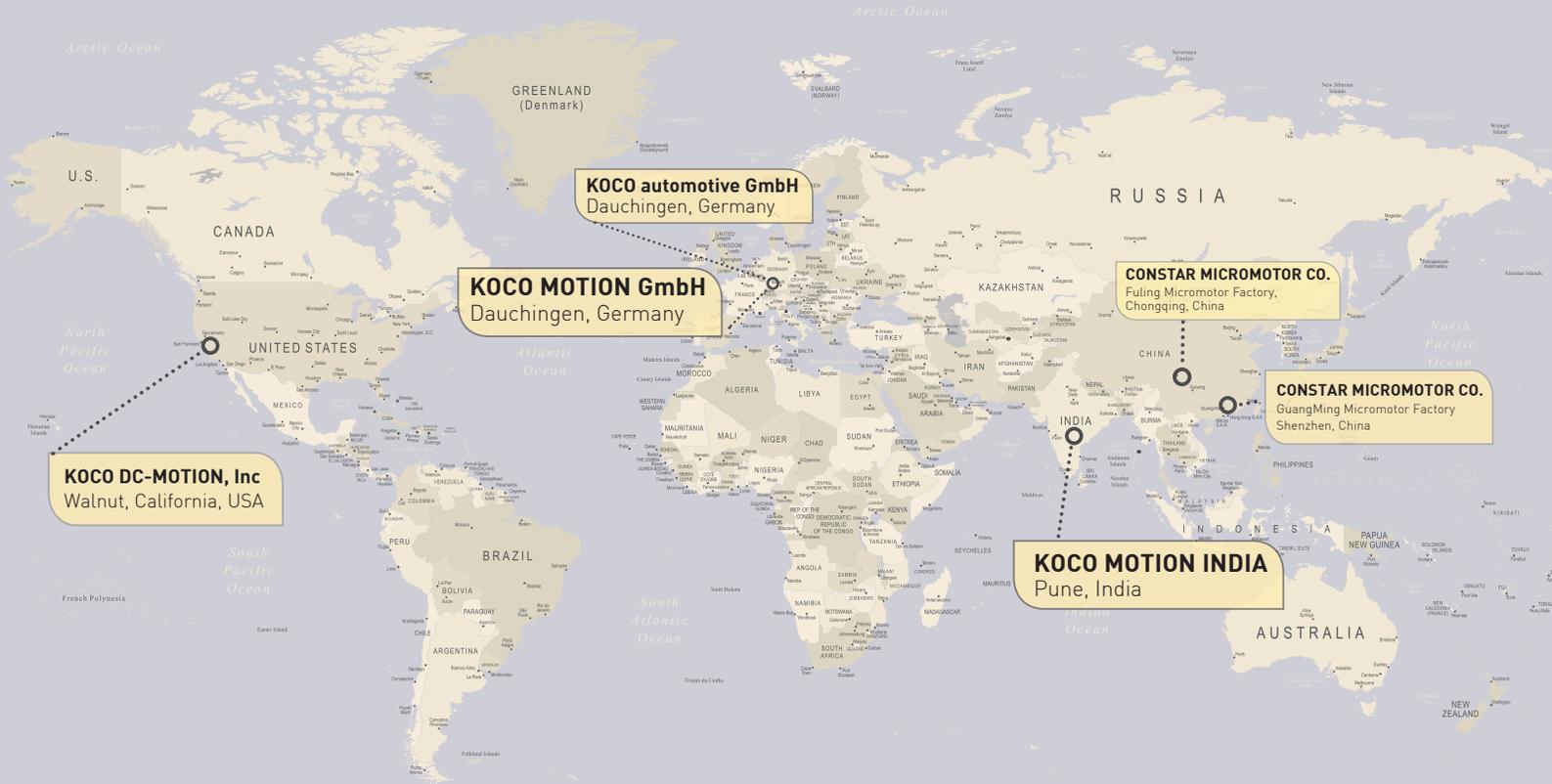
Typical applications

Electric toothbrushes, healthcare equipment, cleaning equipment, washing brush, facial massager, etc.

	Motor No.	Dia x Length (max) in mm	Max. Load Frequency Times/minute
1	1434ZDF	11.50 x 14.50 x 34.00	39600
2	1640ZDF	12.00 x 16.00 x 39.80	42000
3	1839ZDF	13.50 x 18.30 x 40.05	33600
4	2038ZDF	14.00 x 20.30 x 38.30	31000
5	2724ZDR	27.00 x 23.50	20400
6	2734ZDR	27.00 x 33.50	20400



SALES REPRESENTATIVES



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