

UNO Corporation



**Compact and powerful motor!
The secret is a special way of
winding the coil.**

[Scope of Business]

Design and manufacture of compact core-less motors

[Core-less Motor]

A core-less motor is a type of permanent magnet commutator motor. It is an outer rotor motor consisting of a cup-like amature, in which its winding is fixed with resin alone, with a built-in permanent magnet field system; it has the following features:

- It is suited to rapid acceleration and deceleration because of its small inertial mass.
- Sparks during commutation are not significant because of its small inductance of winding.
- High efficiency can be attained.

(Source: Wikipedia)

We play an important part in the development of next generation industries, such as precision apparatuses and robots, by providing these compact, high performance, and high efficiency precision motors.

Moreover, we cooperate with customers in the development of air core coils and core-less generators by applying core-less motor technologies from the beginning of development.

Established	January 2005
Capital	¥4 million
Head Office	1-80-2 Okkonoki, Kuroishi-shi, Aomori, 036-0357 Japan
Employees	5
Representative	Yoshitomo Uno, President and Representative Director
Award	Certified as an "Aomori Meister" in 2010
URL	http://www.uno-motor.com/
E-mail	info@uno-motor.com



President Yoshitomo Uno

It has been 30 years since we first engaged in the design and development of motors. We have succeeded in the development of the world's first core-less motor in which a coil is wound vertical to the rotation axis; a motor of 2 cm in length is as powerful as a traditional motor of 6 cm in length.

The coil winding technology can be applied in a wide range of fields. Recently, our coil winding technology has been utilized usefully for wind power generation, where wind is weak. Please contact us for consultation about the assembly of special coils and precision apparatuses.



Products

1 Core-less motor

We have succeeded in the development of the world's first core-less motor in which a coil is wound vertical to the rotation axis; a comparable torque can be generated by a core-less motor of less than half the length of a traditional one.

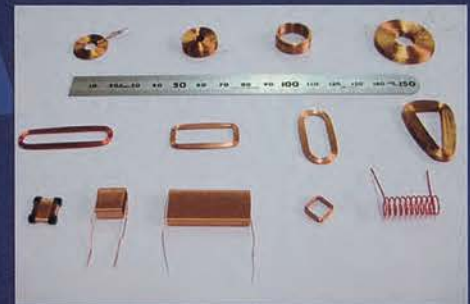
- Application examples**
- High-quality model railway
 - Bipedal robot



2 Core-less coil

There are three kinds of coils: air core coils, core coils, and ring coils. An air core coil is used usually for high-frequency applications, because it is durable at high power and small in inductance, which induces electromotive force in response to changes in electric current.

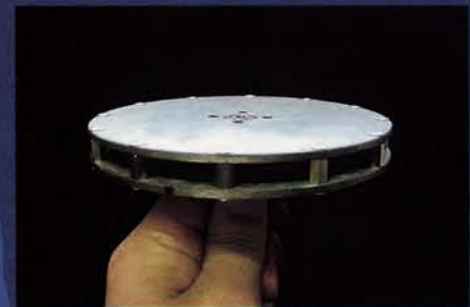
- Application examples**
- Antenna coil
 - Electromagnetic induction coil
 - Sensor coil



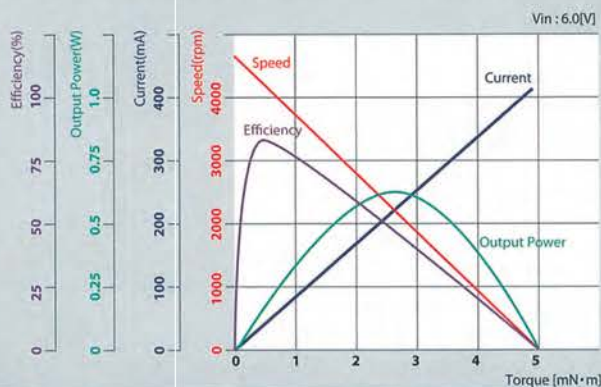
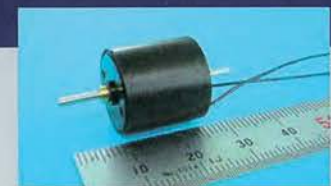
3 Core-less generator

The coil of a core-less generator has no iron core. It is free from loss of torque, because it avoids the loss due to cyclic magnetization of the iron core.

- Application examples**
- Compact wind power generator
 - Compact hydroelectric generator



Many UHM505 series core-less motors are used in applications of high-quality model railways and robot research. Changes in flange, output shaft, and lead wire are acceptable. Tuning of electrical characteristics is provided as desired.



Item	Specs	Units
Applied voltage	6.0	V
No-load speed	4632	rpm
No-load current	3.9	mA
Starting current	409	mA
Minimum starting voltage	0.03	V
Motor resistance	14.7	Ω
Starting torque	5	mN·m
Maximum efficiency	81.4	%
Maximum output	0.6	W
Weight	16.5	g