



6mm Planetary Gear Motors

INEED Motors' 6mm Ultra-Compact Planetary Gear Motors with High Torque & Precision Gearing

INEED Motors designs and manufactures ultra-compact [6mm planetary gear motors](#) that combine a coreless DC motor with a high-precision plastic planetary gearbox. These miniature gearmotors deliver exceptional torque density and reliability in a cylindrical form factor measuring just 6mm in diameter and weighing as low as 1.25 grams. The company's planetary gear motor series offers gear ratios ranging from 5.14:1 to 699.55:1, enabling engineers to achieve precise speed reduction and increased torque in tightly constrained applications. The gearbox utilizes liquid crystal polymer (LCP) gears and a nylon output shaft, ensuring smooth operation and durability. With an operating voltage range of 2.1V to 3.6V DC (and customizable starting voltages as low as 0.8V), these motors are suited for battery-powered devices. Designers can select from multiple gear stages and brushed motor lengths (9mm and 15mm) to match specific performance requirements in areas such as miniature robotics, medical instruments, smart home actuators, and industrial automation.

6 Key Advantages of INEED 6mm Planetary Gear Motors

Extremely Compact Size

Only 6mm diameter, ideal for micro applications.

High Torque Output

Delivers up to 200g.cm torque in tiny package.

Multiple Gear Ratios

Options from 5.14:1 to 699.55:1 available.

Lightweight Design

Weighs as little as 1.25 grams.

Custom Voltage Support

Low starting voltage (0.8V) can be customized.

Quiet and Durable

LCP gears ensure long lifetime and low noise.

Typical Applications

Miniature robotics

Medical devices and diagnostic equipment

Smart home actuators and IoT devices

Precision industrial automation and instruments

Performance Notes

The company advises designers to avoid continuous stall conditions and excessive torque loads (beyond 250g.cm) to protect motor lifespan. These 6mm planetary gear motors perform optimally at 3.0V DC, with output speeds ranging from 40 RPM to 6,420 RPM. Customization of electrical and mechanical interfaces is available to meet specific integration requirements.

With their focus on miniaturization and performance, INEED Motors' planetary gear motor solutions offer engineers and procurement specialists a reliable motion component for advanced micro-technologies.

For more technical details, please send email to inquiry@ineedmicromotors.com or call us at (+86) 769 2289 1073.