Planetary Gear Motor GMP10

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Planetary Gear Motor GMP10

Main Applications

AI Robots

Robot joints, wheel drives, grippers, dexterous-hand mechanisms, mobile chassis, and other compact mechanisms requiring higher torque density.

Focus: Evaluate continuous torque, peak torque, reverse impact, backlash, temperature rise, and feedback requirements.

Industrial Automation

Small robot joints, AGV/AMR wheel drives, electric fixtures, tightening tools, and precision positioning mechanisms.

Focus: Axial/radial shaft load, start-stop frequency, bearing life, backlash, and duty cycle should be verified.

Smart Home

Electric curtains, window openers, lifting mechanisms, and other compact actuators requiring stable low-speed output and adequate load capability.

Focus: Match ratio to required action time and torque; validate noise and position repeatability in the complete mechanism.

Automotive Electronics

Seat adjustment, powered tailgate, door-drive and similar compact actuator mechanisms.

Focus: Frequent reversing, peak load, vibration, temperature variation, backlash, and feedback configuration should be evaluated.

Medical Equipment

Rehabilitation equipment, precision adjustment mechanisms, medical robots, and other compact drive modules requiring stable output.

Focus: Low noise, low vibration, repeatability, life consistency, and interface requirements should be validated at system level.

Smart Agriculture & Gardening

Mower wheel drives, pruning-tool mechanisms, actuators, and lifting/adjustment structures.

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Focus: Consider slope, shock load, dust, moisture, vibration, shaft sealing and outdoor protection at system level.

Commercial & Office Equipment

Coffee-machine mechanisms, cash-handling equipment, ticketing terminals, automatic pickup mechanisms and similar compact drives.

Focus: High-cycle operation should be tested with the real load profile, including current, temperature rise, noise and backlash change.

FAQ

Q1. What applications are planetary gear motors best suited for?

Planetary gear motors are ideal for applications that require high torque density, compact size, stable transmission, and relatively low backlash. Typical applications include robot joints, grippers, AGV/AMR wheel drives, medical devices, automotive actuators, smart home mechanisms, and industrial automation equipment.

Q2. How should I choose the gear ratio and output torque?

The gear ratio should be selected based on the required output speed, load torque, motor speed, operating time, and duty cycle. A ratio that is too low may not provide enough torque, while an excessively high ratio may reduce output speed and increase transmission stages, noise, cost, and mechanical losses. Continuous, starting, and peak torque should all be evaluated during selection.

Q3. Can planetary gear motors be used for precision positioning?

Yes. Planetary gear motors can be designed with controlled backlash and combined with encoders or Hall sensors for position and speed feedback. However, final positioning accuracy also depends on gearbox backlash, sensor resolution, mechanical stiffness, assembly tolerances, and the control algorithm, so system-level validation is recommended for precision applications.

Q4. How do you evaluate reliability and servic[illegible]

Reliability s[illegible]alidated under the customer's actual operating condi[illegible]

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including load, start-stop frequency, reversing cycles, temperature, shock, vibration, and duty cycle. Key performance items such as speed, current, torque, temperature rise, noise, backlash, and gear wear can be monitored during life testing.

Q5: How do I place an order with Shunli Motor?

Please send us your application requirements or motor specifications. Our engineering team will develop a suitable solution, confirm the technical details, and provide samples for evaluation. Once the samples are approved, we will arrange mass production. Shipping methods can be selected based on your delivery requirements.

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Product Overview

The GMP10 is a planetary gear motor with high torque density, compact coaxial output, and strong load capacity. It is designed for robots, AGVs, lawn mowers, medical equipment, industrial automation, conveyors, and precision devices.

Model Information

Series	Motor Type	Product Category
GMP10	PMDC Motor	Planetary Gear Motor

Main Parameters

Technical Data

Model	Ratio	Rated Voltage	No-load Speed	No-load Current	Rated Speed	Rated Current	Rat
GMP10-171K (3 V)	1:171	3 VDC	85 RPM	≤50 mA	63 RPM	≤130 mA	

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GMP10-171K (4.5 V)	1:171	4.5 VDC	90 RPM	≤60 mA	67.5 RPM	≤180 mA	

Technical Data

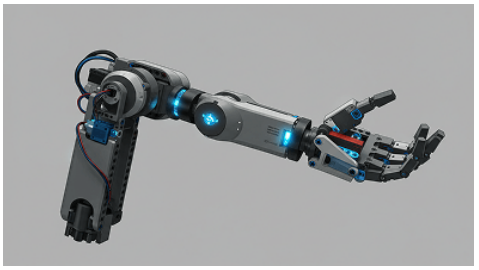
Motor	Motor Length	Rated Voltage	No-load Speed	No-load Current	Rated Speed	Rated Current	Rated T
SL-M10	—	3 VDC	15200 RPM	≤50 mA	11600 RPM	≤100 mA	0.1 mN / 1. gf·
SL-M20	—	4.5 VDC	11000 RPM	≤45 mA	8200 RPM	≤140 mA	0.2 mN

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Dimension Drawing

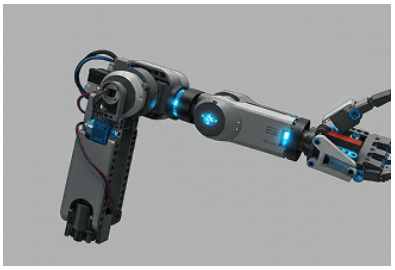
Contact us for the dimension drawing of this model.

Main Applications



Industrial Automation

Industrial valves, dampers, gates, low-speed rotary platforms, adjustment mechanisms, and



Industrial Automation

Industrial valves, dampers, gates, low-sp rotary platforms, adjustment mechanisms

Customization Range

- Electrical Configuration

  Rated voltage and motor selection based on target speed, torque, current, and duty cycle.

- Performance Matching

  Gear ratio, output speed, continuous / starting / peak torque, current limit, and load margin.

- Mechanical Interface

  Output shaft shape and length, mounting flange, gearbox earing configuration, and installation interface.

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Feedback Options

Hall sensor or encoder configuration can be evaluated according to speed, position, or stall-detection requirements.

Backlash / Noise Optimization

Gear precision, assembly fit, lubrication, speed matching, and complete-product resonance can be evaluated.

Reliability Validation

Frequent start-stop, reverse impact, temperature rise, axial/radial load, vibration, shock, and application-specific life cycle.

FAQ

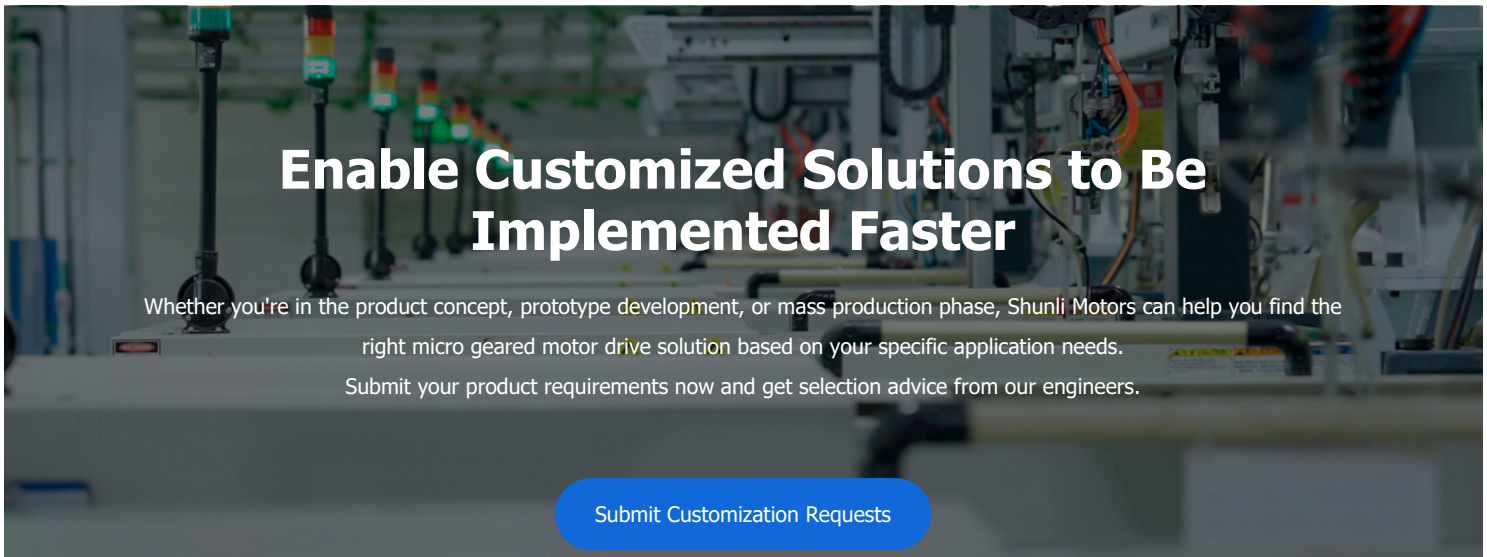
Q1: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

Yes. Provide the product structure, space, load, and motion requirements, and our engineering team can assist with parameter conversion and solution evaluation.

Q2: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

Q3: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

Q4: What types of projects are best suited to the GM58EM DC Worm Gear Motor?



Enable Customized Solutions to Be Implemented Faster

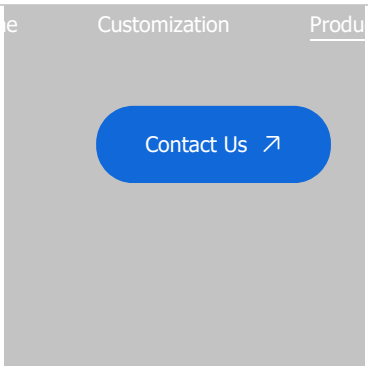
Whether you're in the product concept, prototype development, or mass production phase, Shunli Motors can help you find the right micro geared motor drive solution based on your specific application needs.
Submit your product requirements now and get selection advice from our engineers.

Submit Customization Requests

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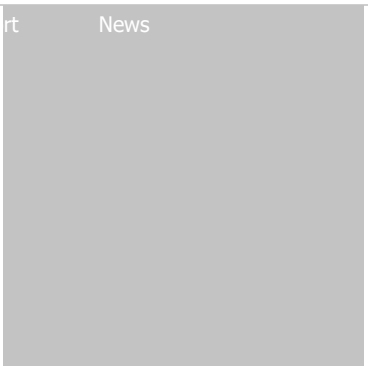
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