Spur Gear Motor GM24FMN20D

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Spur Gear Motor GM24FMN20D

Main Applications

Smart Agriculture & Gardening

Electric pruning tools, automatic feeding equipment, small irrigation devices, spraying equipment, quantitative feeding, rotary adjustment and automatic opening/closing mechanisms.

Focus: Evaluate dust/moisture exposure, startup resistance, jam conditions, gear material, lubrication and product-level sealing in the real equipment.

Automotive Electronics

Automotive door locks, charging-port covers, HVAC air flaps, hidden door handles and other small opening/closing mechanisms.

Focus: Validate high/low-temperature start, vibration, stall, noise, duty cycle and batch consistency according to the customer project standard.

Smart Home

Smart door locks, electric curtains, window openers, smart blinds, automatic soap dispensers, smart bins and compact appliance actuators.

Focus: Balance noise, power consumption, startup current, speed, torque, package size and repeated-cycle reliability.

Medical Equipment

Electronic blood pressure monitors, drug-dispensing equipment, sample transport mechanisms, medical valves and compact rotate/push-pull/open-close/quantitative actuators.

Focus: Evaluate noise, vibration, temperature rise, duty cycle, stall protection and batch consistency inside the actual device.

Main Applications (continued)

AI Robots Service-robot grippers, hatches, feeding mechanisms, cleaning modules and light-load joints.

Focus: For frequent start-stop or reversing, verify gear impact, wear, backlash, lu output-shaft loading and cycle life.

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Industrial Automation

Small conveyors, feeders, sorting mechanisms, labeling equipment, automatic fixtures and inspection equipment.

Focus: Separate continuous, starting and peak torque requirements; match motor, ratio and stage count to the actual cycle rather than applying one generic safety factor.

Commercial / Office Equipment

Coffee machines, printers, copiers, smart lockers and ticketing equipment for feeding, dispensing, opening/closing, locking and transmission.

Focus: Evaluate jam/stall peak torque, noise, cycle life and recovery logic while controlling package size and cost.

Custom Drive Applications

Non-standard small transmission mechanisms where standard voltage, speed, ratio, shaft, mounting or motor configuration does not fit.

Focus: Re-match motor, ratio, stage count, output shaft and operating point to the customer mechanism and validation target.

Application Pain Points & GM24 Engineering Response

FAQ

Q1. What information is required to select a GM24FMN20 spur gear motor?

Provide working voltage, target travel/output speed, axial load or equivalent torque, lead-screw geometry, installation space, run time per cycle, daily cycle count, jam/stall conditions, noise target, life target and annual demand. If parameters are incomplete, a mechanism drawing or existing sample can be used for initial matching.

Q2. How should engineers choose the gear ratio for a lead-screw mechanism?

Start from the target linear travel speed and required axial force, then match the lead-screw geometry, gear ratio, motor speed, current and duty cycle. A higher ratio is not automatically better because it can reduc[illegible]peed and change efficiency, n[illegible]ycle time.

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Q3. Can the GM24FMN20 be used when the mechanism may jam?

It can be evaluated, but the supplied drawing states that stall operation is not allowed. Normal operating load and jam/stall load must be treated separately, and the system should use appropriate current limiting, timeout, reverse-release or mechanical protection when blockage is possible.

Q4. How can noise be reduced?

Noise should be optimized at system level through motor operating speed, ratio and stage selection, gear meshing, lubrication, assembly consistency, mounting stiffness and enclosure resonance. Final acceptance should be performed in the customer's actual product rather than by motor no-load noise alone.

Q5. What can be customized for a GM24FMN20 project?

The supplied product-family data supports gearbox ratio, voltage, speed and shaft/output customization. For lead-screw projects, screw length, nut/interface geometry, wiring and installation details should be confirmed through engineering evaluation.

Q6. What should purchasing teams provide for quotation and mass-production evaluation?

Provide the target model or performance requirement, drawing/sample, estimated annual demand, expected validation items and critical quality/delivery requirements. For customized projects, the sample scope and volume-production acceptance criteria should be confirmed after the technical solution is frozen. Parameter Integrity Note All numerical values for the GM24FMN20D006-50K reference configuration are taken from the supplied engineering drawing and product-family parameter image. Where the two sources differ in scope, the formal engineering drawing is treated as the primary reference for this specific sample. The 30 kgf·cm maximum torque shown in the family marketing table is not used as [illegible] torque of this 1:[illegible] sample; the [illegible] rawing values of 100 gf·cm rated torque reference

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≥400 gf·cm stall torque are used instead. Final production specifications should be confirmed on the approved drawing/specification.

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Product Overview

24 mm N20 micro DC spur gear motor | 6 VDC reference configuration with lead-screw output The GM24FMN20 Series is a compact 24 mm-class DC spur gear motor platform designed for small mechanisms that require controlled low-speed output, efficient spur-gear reduction, and a compact linear-drive interface. The supplied GM24FMN20D006-50K reference configuration uses a 1:50 gear ratio and 6 VDC rated voltage, delivering 300 ±10% RPM at no load and 250 ±10% RPM at the rated operating point. The reference rated torque is 100 gf·cm, with a minimum stall torque of 400 gf·cm. Its N20 brushed DC motor, compact 24 mm gearbox, lead-screw interface, and customizable ratio/shaft options make it suitable for miniature linear actuators, smart-home mechanisms, compact automation modules, dispensing systems, locking mechanisms, and other OEM micro-drive applications. For engineering selection, confirm the required travel speed, axial load, duty cycle, allowable current, lead-screw geometry, installation space, noise target, and jam/stall conditions. The supplied drawing specifies stall operation is not allowed; final performance should therefore be validated in the complete customer mechanism with appropriate current and timeout protection.

Model Information

Reference Model	Motor	Ratio	Rated Voltage	Product Category
GM24FMN20D006-50K	N20 PMDC Motor	1:50	6 VDC	DC Spur Gear Motor / Lead-Screw Drive

Gearmotor Model	Ratio	Rated Voltage (V)	No-Load Speed (RPM)	No-Load Current (mA)	Rated Speed (RPM)	Ra Cur (m
GM24FMN20D006-50K	1:50	6 VDC	300 ±10%	≤ 50	250 ±10%	≤ 1

Item	Reference Data	Reference Data	Reference Data	Reference

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Available Gear Ratios	10 / 50 / 78 / 100 / 150 / 200 / 298 / 500	10 / 50 / 78 / 100 / 150 / 200 / 298 / 500	10 / 50 / 78 / 100 / 150 / 200 / 298 / 500	10 / 50 / 7 100 / 150 200 / 298 500
Gearbox Width	24 mm reference	24 mm reference	24 mm reference	24 mm reference
Voltage Family Reference	4.5-12 V customizable; current drawing rated at 6 VDC	4.5-12 V customizable; current drawing rated at 6 VDC	4.5-12 V customizable; current drawing rated at 6 VDC	4.5-12 V customiza current drawing rated at 6 VDC
Output Speed Family Reference	10-500 RPM customizable; current drawing rated speed 250 ±10% RPM	10-500 RPM customizable; current drawing rated speed 250 ±10% RPM	10-500 RPM customizable; current drawing rated speed 250 ±10% RPM	10- cus cur dra rat 250 RP
Selection Note	Confirm ratio, lead-screw load, duty cycle, current limit and stall protection for the final configuration.	Confirm ratio, lead-screw load, duty cycle, current limit and stall protection for the final configuration.	Confirm ratio, lead-screw load, duty cycle, current limit and stall protection for the final configuration.	Confirm ra lead-screw load, duty cycle, curr limit and s protection the final configurat

PMDC Motor Model	Motor Length L (mm)	Rated Voltage (V)	No-Load Speed (RPM)	No-Load Current (mA)	Rated Speed (RPM)	Rated Cu (mA
N20	Not separately specified	6 VDC	15000 ±10%	≤ 35	Not separately specified	Not separa specifi

Main Parameters

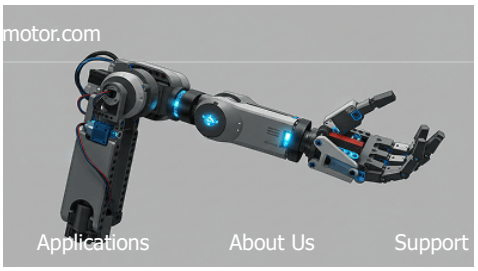
Dimension Drawing

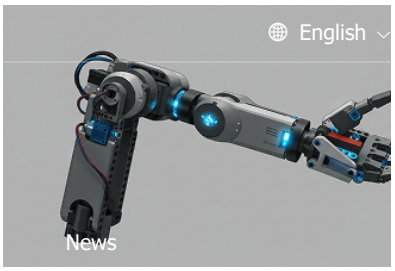
Contact us for the dimension drawing of this model.

Main Applications

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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

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Customization Range

- Gear Ratio & Linear Output Matching
- Select the reduction ratio together with the lead-screw geometry to match target travel speed, axial force, current, noise, and duty cycle. The supplied family reference lists 10 / 50 / 78 / 100 / 150 / 200 / 298 / 500 ratios as available or customizable.
- Motor Configuration
- The supplied reference uses an N20 PMDC motor at 6 VDC. The product-family material indicates 4.5-12 V customization; project-specific voltage and operating point should be confirmed through engineering evaluation.
- Output Shaft / Lead Screw
- Lead-screw dimensions, screw length, nut geometry and output interface can be evaluated for the customer mechanism. The supplied drawing identifies a T3.5×1×3 lead-screw reference.
- Performance Matching
- Output speed, torque and current should be matched to the actual continuous/start/peak load and duty cycle. A target RPM alone is insufficient for reliable selection.
- Gear / Lubrication Optimization
- For noise, life, start-stop or environmental requirements, gear material, meshing condition and lubrication can be evaluated as part of the project solution.
- Wiring / Interface
- Lead wire and terminal/interface requirements can be evaluated from drawings, samples and assembly constraints.
- Validation & Mass Production
- Sample-stage validation can cover speed, current, torque, noise, temperature rise, stall/jam behavior, cycle life and installation fit; pilot production should confirm process capability and batch consistency.
- Information Required for Custom Evaluation
- • End product and motion task
- • Working voltage
- • Target output speed

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- Continuous, starting and peak torque requirements
- Installation space and output-shaft/interface drawing
- Single-cycle run time and daily operating cycles
- Start-stop / reversing frequency
- Expected jam or stall conditions
- Ambient temperature, noise target and expected service life
- Annual demand and validation/certification requirements

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FAQ

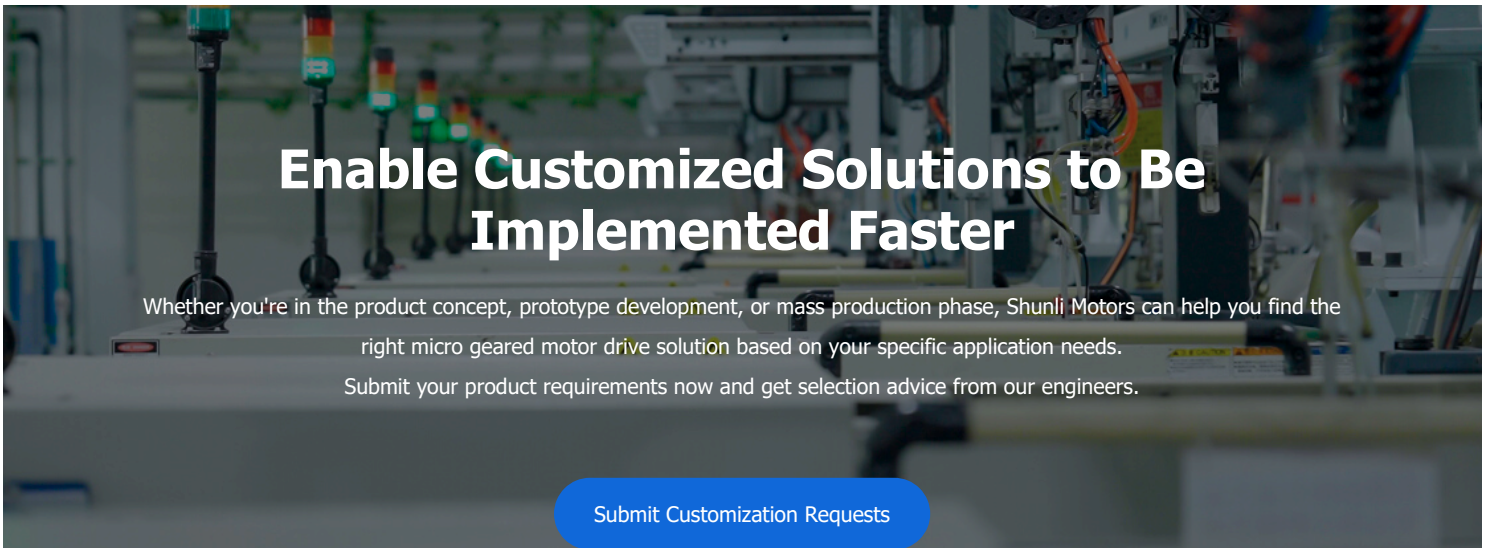
Q1: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

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

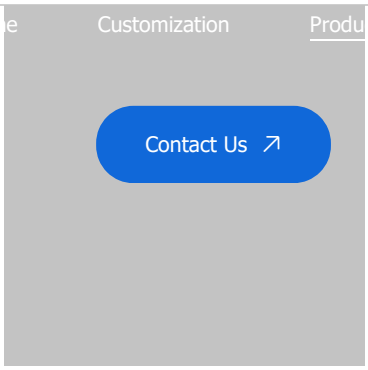
Whether you're in the product concept, prototype development, or mass production phase, Shunli Motors can help you find the right micro geared motor drive solution based on your specific application needs.
Submit your product requirements now and get selection advice from our engineers.

Submit Customization Requests

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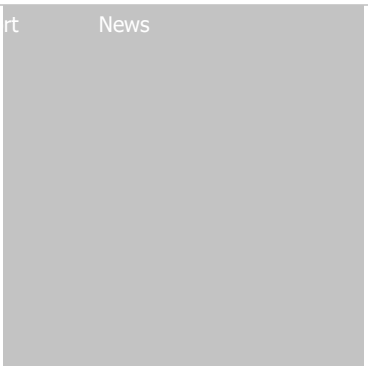
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