Spur Gear Motor GM824FMN20

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Spur Gear Motor GM824FMN20

Main Applications

Smart Agriculture & Gardening

Electric pruning tools, automatic feeding equipment, small irrigation devices, spraying equipment, quantitative feeding, rotary [illegible] 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, [illegible] output-shaft loading and cycle life.

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Industrial Automation

Small conveyors, feeders, 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 & GM824FMN20 Engineering Response

FAQ

Q1. What information is required to select a GM824FMN20 spur gear motor?

Provide working voltage, target output speed, continuous/start/peak torque, installation space, shaft/interface drawing, run time per cycle, daily cycle count, stall/jam conditions, noise target, life target and annual demand. If parameters are incomplete, a mechanism drawing or existing motor sample can be used for initial matching.

Q2. How should engineers select the gear ratio and operating point?

Start from the target output speed and torque, then check gearbox rated torque, break torque, efficiency, motor current, duty cycle and available installation space. The selected operating point

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should meet the mechanism requirement without relying on prolong excessive torque margin.

Q3. Can the GM824FMN20 be used when the mechanism may jam?

It can be evaluated, but normal operating torque and jam/stall peak torque must be treated separately. The gearbox breaked torque must not be ignored, and the complete system should use appropriate current, 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 GM824FMN20 project?

The source data explicitly supports gearbox transmission-ratio and output-shaft customization, as well as motor-parameter customization. Other project-specific items such as wiring/interface, gear/lubrication and performance matching 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 gearbox, gearmotor and PMDC motor parameters in this document are reproduced from the supplied GM824FMN parameter workbook and GM824F mechanical drawing. The

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engineering drawing is treated as the primary source for dimens[illegible] interfaces. Final production specifications should be confirmed against the approved project drawing and sample before mass production.

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Product Overview

Compact 4.5 VDC N20 micro DC spur gear motor | 1:240 reference configuration for OEM drive systems The GM824FMN20 Series is a compact 4.5 VDC DC spur gear motor designed for small mechanisms that require low-speed output, controlled current, and a mature spur-gear transmission in a space-constrained package. The supplied GM824FMN20 reference configuration uses a 1:240 gear ratio, delivering 58 RPM at no load and 50 RPM at the rated operating point. Reference rated torque is 24 mN·m (240 gf·cm), with a stall torque of 0.13 N·m (1.3 kgf·cm). Its N20 brushed DC motor, compact gearbox layout, and external gear-drive architecture make it suitable for locking mechanisms, smart-home actuators, compact automation modules, dispensing equipment, and other OEM micro-drive applications. For engineering selection, confirm the required output speed, continuous/start/peak torque, duty cycle, allowable current, installation space, noise target, jam/stall conditions, and customer-side gear or mechanism interface. Final current, temperature rise, noise, gear loading, and service life should be validated in the complete customer mechanism rather than from no-load data alone.

Model Information

Reference Model	Motor	Ratio	Rated Voltage	Product Category
GM824FMN20	SL-N20-09175	1:240	4.5 VDC	DC Spur Gear Motor

Gearmotor Model	Ratio	Rated Voltage (V)	No-Load Speed (RPM)	No-Load Current (mA)	Rated Speed (RPM)	Rated Current (mA)
GM824FMN20	1:240	4.5 VDC	58	≤65	50	≤130

Item	Reference Data
Reference Gear Ratio	1:240

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Max. Rated Gearbox Torque	0.5-1.5 kgf·cm
Max. Gearbox Break Torque	2-3 kgf·cm
Gearbox Efficiency	25%-45%
Selection Note	Confirm output speed, continuous/start/peak torque, current, duty cycle, and jam conditi configuration.

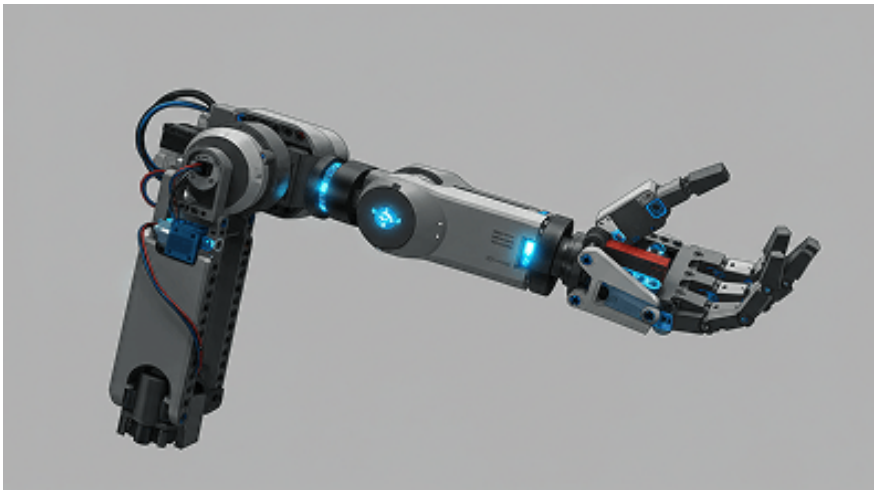
PMDC Motor Model	Motor Length L (mm)	Rated Voltage (V)	No-Load Speed (RPM)	No-Load Current (mA)	Rated Speed (RPM)	Rated Current (mA)	Ra To mN
SL-N20-09175	—	4.5 VDC	14000	≤40	12000	≤130	

Main Parameters

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 compact actuators requiring right-angle transmission.

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Customization Range

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- Gear Ratio & Stage Count
- Select from the supplied 1:240 reference ratio and any project-specific [illegible] confirmed by engineering and evaluate each configuration against target speed, torque, gearbox length, efficiency, noise, and life requirements.
- Motor Configuration
- Motor parameters can be customized. The supplied platform includes SL-N20 PMDC motor references at 4.5 VDC; project-specific voltage and operating point should be confirmed through engineering evaluation.
- Output Shaft
- The project-specific output interface can be evaluated from drawings or samples. Provide shaft geometry, length, flat/thread feature, tolerance and interface drawing for evaluation.
- 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
- • 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

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English

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.

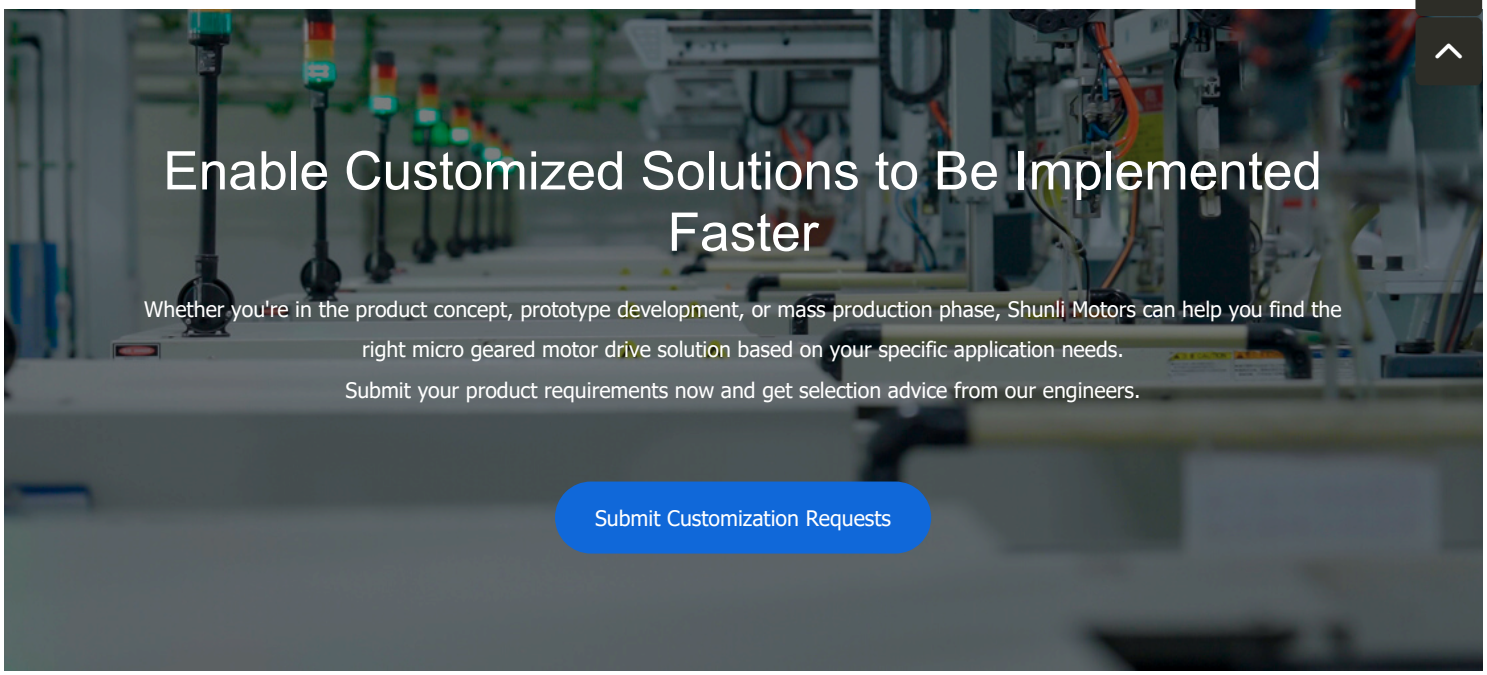
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Q2: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

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?



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