

Greartisan GA37RG

Greartisan GA37RG DC 12V 10RPM Gear Motor Instruction Manual

Model: GA37RG

1. INTRODUCTION

This manual provides detailed instructions for the safe and efficient use of your Greartisan GA37RG DC 12V 10RPM Gear Motor. This high-torque electric micro speed reduction geared motor features a centric output shaft and a 37mm diameter gearbox, designed for various applications requiring precise, low-speed rotation. Please read this manual thoroughly before installation and operation.



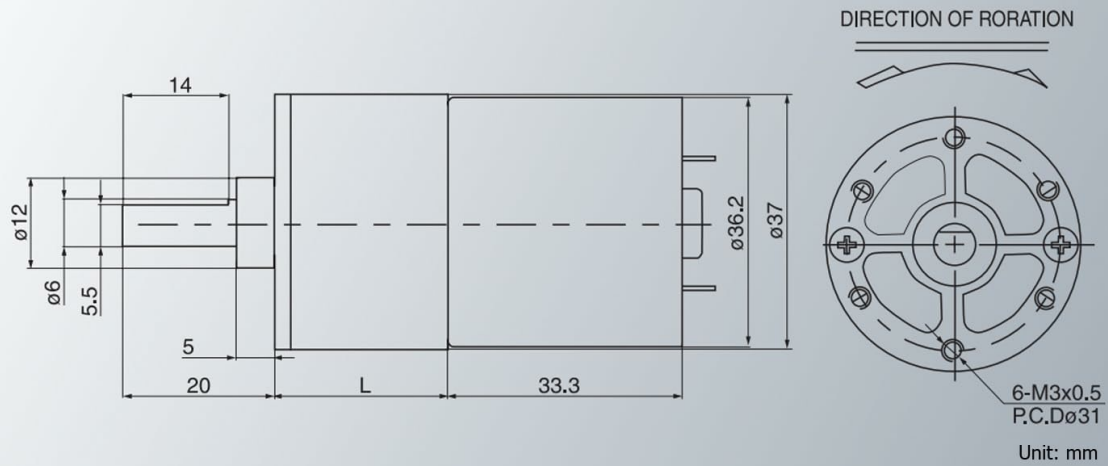
Figure 1: Greartisan GA37RG DC 12V 10RPM Gear Motor. This image shows the overall appearance of the gear motor, highlighting its compact design and robust construction.

2. SPECIFICATIONS

The Greartisan GA37RG motor is engineered for reliable performance in various applications.

- **Rated Voltage:** DC 12V
- **Reduction Ratio:** 1:401
- **No-Load Speed:** 10RPM
- **No-Load Current:** 0.15Amp
- **Rated Torque:** 15Kg.cm
- **Rated Current:** 0.6Amp
- **Output Shaft Size:** D-shaped, 6 x 14mm (0.24" x 0.55") (Diameter x Length)
- **Gearbox Size:** 37 x 30.5mm (1.46" x 1.2") (Diameter x Length)
- **Motor Size:** 36.2 x 33.3mm (1.43" x 1.31") (Diameter x Length)
- **Mounting Hole Size:** M3 (screws not included)
- **Material Type:** Alloy Steel

GA37RG



Robot



Amusement Equipment



Smart Home



Smart Lock



Vending Machine

Figure 2: Technical drawing illustrating the dimensions of the GA37RG motor and examples of its typical applications, including robotics, amusement equipment, smart home devices, smart locks, and vending machines.

Key Features:

- **All-Metal Gears:** High-temperature resistance, high abrasion resistance, strong load capacity, ensuring durability and effective protection of the gearbox motor body.
- **Pure Copper Wire Core Rotor:** Precision winding technology enhances motor power by 30%, offering low heat generation and a long service life.
- **D-Shaped Output Shaft:** Constructed from high-hardness steel for good toughness and impact resistance, improving bearing quality and extending the motor's service life.
- **Positive-Negative Rotation:** The motor supports bidirectional rotation by reversing wiring polarity.



Sealing Process

Enhances the corrosion resistance, lightfastness, wear resistance and insulation of metal parts, prolongs the service life of equipment

100% Pure Copper Wire

Compared with aluminum wire, copper wire has lower resistance, stronger conductivity performance, and it also features low heat generation, long service life and other attributes



End Cap Assembly

From parts to the completed assembly, strict control is exercised over every detail, constantly improving the skill and pursuing perfection

Figure 3: Detailed view of the motor's internal components, highlighting the sealing process for corrosion resistance, the pure copper wire rotor for enhanced conductivity, and the robust end cap assembly.

3. SETUP

3.1 Mounting

Securely mount the motor using M3 screws (not included) through the designated mounting holes. Ensure the motor is stable and properly aligned with the driven component to prevent undue stress on the shaft or gearbox.

3.2 Wiring

Connect the motor to a stable DC 12V power source. The motor has two leads:

- **Red Lead:** Connect to the positive (+) terminal of the power supply.
- **Black Lead:** Connect to the negative (-) terminal of the power supply.

Note: If the wiring polarity is reversed, the motor will rotate in the opposite direction.

4. OPERATING INSTRUCTIONS

4.1 Power and Load

Operate the motor within the specified voltage (DC 12V) and current (0.6A rated) ranges. Exceeding these limits can degrade motor performance and shorten its lifespan. Ensure the load applied to the motor is within the rated torque of 15Kg.cm.

4.2 Speed Control

The motor's speed can be reduced using an external Pulse Width Modulation (PWM) controller. However, the motor speed cannot be increased beyond its rated 10 RPM.

4.3 Rotation Direction

The direction of rotation is controlled by the polarity of the power supply. Reversing the positive and negative connections will reverse the motor's rotation.

5. MAINTENANCE

5.1 Handling

Handle the motor gently. When manipulating the motor, grasp it by the motor shell as much as possible to avoid damaging the shaft or internal components.

5.2 Storage Conditions

- **Storage Temperature:** 0°C - 40°C (32°F - 104°F)
- **Storage Humidity:** 15% - 90% RH
- Avoid placing the motor in environments with high temperatures, high humidity, or corrosive gases.

5.3 Operating Temperature

The recommended operating temperature range for the motor is 0°C - 70°C (32°F - 158°F).

6. TROUBLESHOOTING

- **Motor Not Running:**
 - Check the power supply to ensure it is providing DC 12V.
 - Verify wiring connections and polarity (red to positive, black to negative).
 - Ensure there are no obstructions preventing the shaft from rotating.
 - Confirm the motor is not overloaded beyond its rated torque.
- **Motor Overheating:**
 - This often indicates an overload condition. Reduce the load on the motor.
 - Avoid prolonged blocking or operating the motor close to a stall state, as this can cause burnout.
 - Ensure the operating temperature is within the recommended range (0°C - 70°C).
- **Unusual Noise During Operation:**
 - Check for proper mounting; loose mounting can cause vibrations.
 - Inspect the gearbox and shaft for any foreign objects or damage.
 - Ensure the load is balanced and not causing excessive strain.
- **Reduced Performance:**
 - Verify that the voltage and current supplied to the motor are stable and within specifications.
 - Check for any signs of wear or damage to the gears or motor components.

7. SAFETY INFORMATION

- **Electrical Safety:** Always disconnect power before performing any wiring, installation, or maintenance on

the motor.

- **Overload Protection:** Do not exceed the motor's rated torque (15Kg.cm). Operating under excessive load, especially prolonged blocking or near-stall conditions, will cause the motor to burn out.
- **Moving Parts:** Keep hands, hair, loose clothing, and other objects clear of the rotating shaft and gears during operation to prevent injury.
- **Environmental Conditions:** Do not expose the motor to water, excessive dust, or corrosive substances.

8. WARRANTY AND SUPPORT

Greartisan is committed to providing high-quality motors. For any quality-related issues or technical support, please contact Greartisan customer service. Refer to your purchase documentation for specific warranty terms and contact information.

For further assistance, please visit the official Greartisan store or contact their support channels.