

Wishiot TD-8125MG

Wishiot TD-8125MG 25KG Digital Servo Instruction Manual

Model: **TD-8125MG** | Brand: **Wishiot**

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Wishiot TD-8125MG 25KG Digital Servo. This high-torque, waterproof digital servo is designed for various applications, including DIY robots, robotic arms, and RC models, offering 360-degree continuous rotation and durable metal gears.

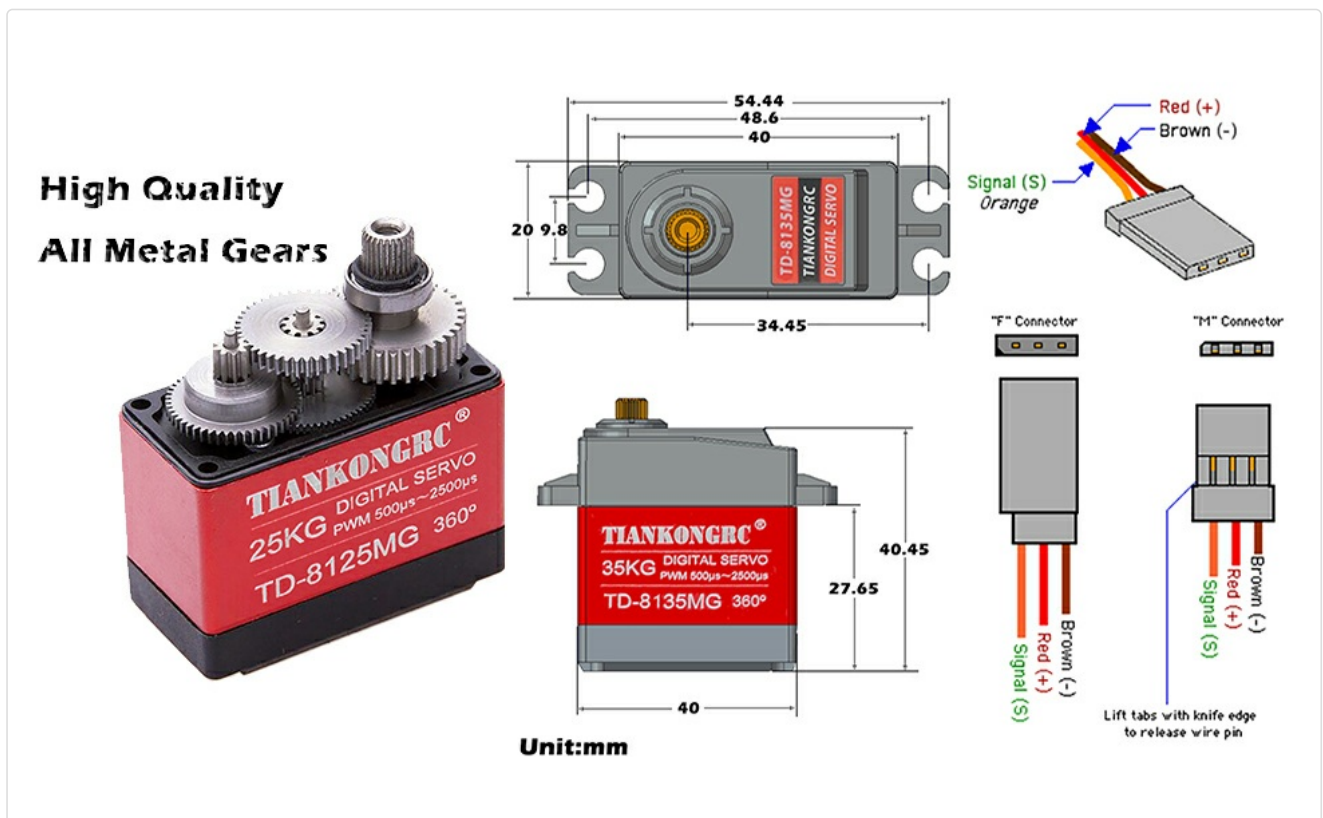


Figure 1: Wishiot TD-8125MG Digital Servo installed in an RC vehicle chassis, demonstrating a typical application.

2. PRODUCT FEATURES

- **High Torque:** Peak stall torque ranges from 23.5kg.cm to 26.8kg.cm.
- **Durable Construction:** Equipped with strong metal gears and a CNC aluminum middle shell for enhanced durability.
- **360-Degree Rotation:** Provides well-controlled 360-degree continuous rotation, suitable for applications requiring full rotational movement.
- **Waterproof Design:** Designed to withstand exposure to water, enhancing reliability in various environments.
- **Compact Dimensions:** Measures 1.58 x 0.79 x 1.60 inches (40 x 20 x 40.5mm) and weighs 85g (2.75oz).



Figure 2: Close-up view of the servo's internal metal gears, highlighting its robust construction.

3. PACKAGE CONTENTS

The package includes the following items:

- 1 x TD-8125MG 25KG Digital Servo
- Various servo horns (e.g., cross, star, single arm)
- Mounting screws
- Brass eyelets and rubber grommets for mounting

Accessories



Figure 3: All included accessories with the TD-8125MG servo, including different types of servo horns and mounting hardware.

4. SPECIFICATIONS

General Specifications:

Feature	Value
Item Model Number	TD-8125MG (also referred to as LS4475-360)
Package Dimensions	4.25 x 3.82 x 0.67 inches
Item Weight	2.64 ounces (85g)
Manufacturer	Wishiot
Recommended Age	17 years and up

Electrical Specifications:



Old

New

Electrical Specification

Operat voltage	4.8V	7.2V
Idle current	mA	mA
No load speed	0.18sec/60°	0.14sec/60°
Runing current	140mA	200mA
Peak stall torque	23.5kg.cm	26.8kg.cm
Stall current	2600mA±10%	3400mA±10%
Working voltage range	4.8-7.2V	

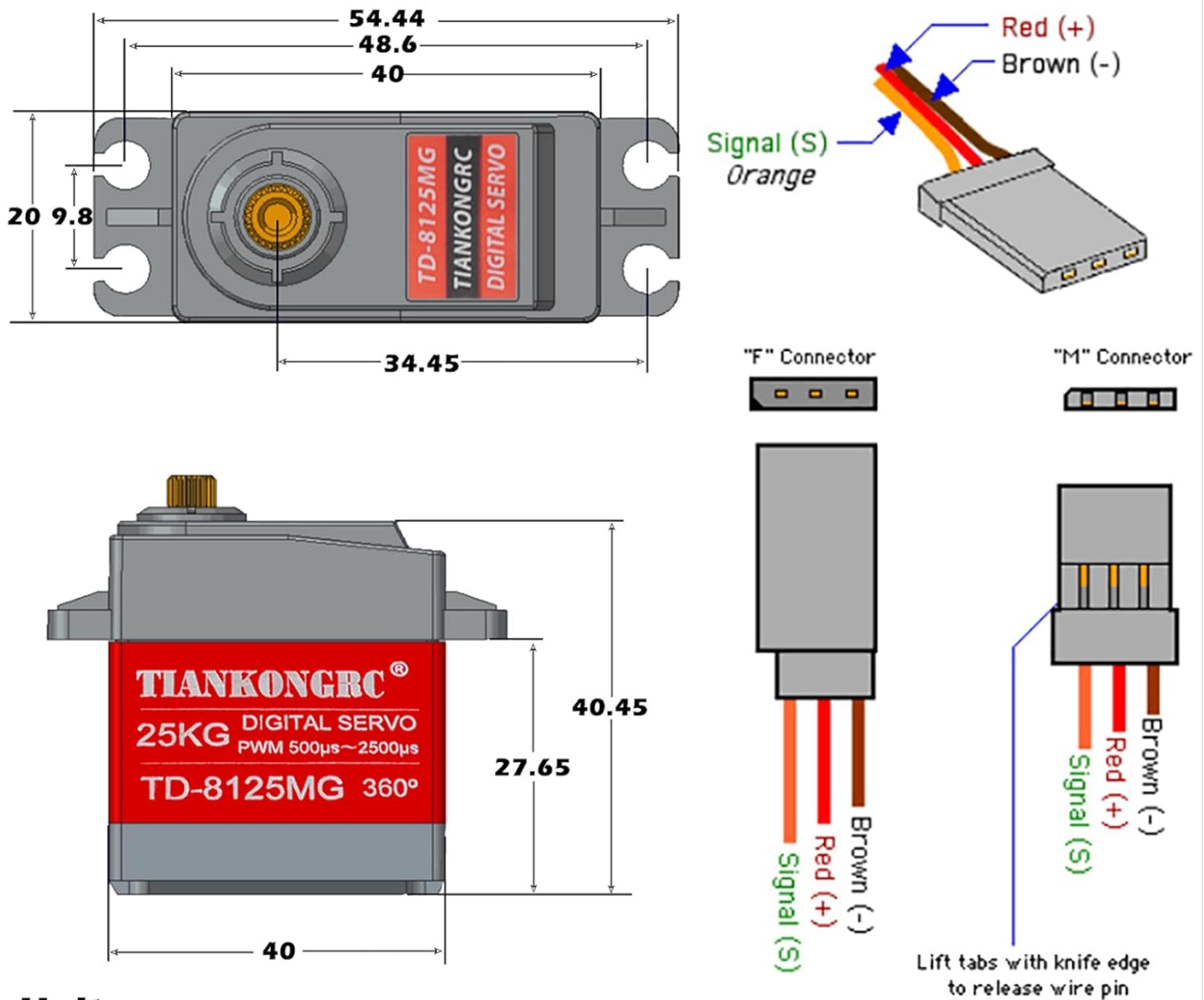
The only difference between the old and the new is the logo.

Figure 4: Electrical specifications for the TD-8125MG servo, detailing performance at different operating voltages.

Parameter	4.8V	7.2V
No Load Speed	0.18 sec/60°	0.14 sec/60°
Running Current	140 mA	200 mA
Peak Stall Torque	23.5 kg.cm	26.8 kg.cm
Stall Current	2600 mA ±10%	3400 mA ±10%
Working Voltage Range	4.8V - 7.2V	

Dimensions and Connectors:

Dimensions and Connectors



Unit:mm

Figure 5: Detailed dimensions of the servo and pinout for the 3-wire connector (Red: +, Brown: -, Orange: Signal).

- **Dimensions:** 40 x 20 x 40.5 mm (Length x Width x Height)
- **Connector Type:** Standard 3-pin servo connector.
- **Wire Colors:**
 - Red: Positive (+)
 - Brown: Negative (-)
 - Orange: Signal (S)

5. SETUP AND INSTALLATION

Follow these steps to properly set up and install your TD-8125MG digital servo:

1. **Mounting the Servo:** Secure the servo in your desired application (e.g., robot chassis, RC model) using the provided mounting screws, brass eyelets, and rubber grommets. Ensure the servo is firmly attached to

prevent movement during operation. Refer to Figure 5 for dimensions to ensure proper fit.

2. **Attaching Servo Horns:** Select the appropriate servo horn from the included accessories based on your application's requirements. Align the horn with the servo's output shaft and secure it with the small screw provided. Ensure the horn is centered before tightening. Refer to Figure 3 for a visual of the included accessories.
3. **Connecting the Wiring:** Connect the servo's 3-wire cable to your receiver or control board. Pay close attention to the polarity:
 - Red wire to Positive (+)
 - Brown wire to Negative (-) / Ground
 - Orange wire to Signal (S)

Incorrect wiring can damage the servo or control board. Refer to Figure 5 for the connector pinout.

4. **Power Supply:** Ensure your power supply provides a stable voltage within the servo's working voltage range of 4.8V to 7.2V. An inadequate power supply can lead to inconsistent performance or damage.

6. OPERATING INSTRUCTIONS

The TD-8125MG is a continuous rotation digital servo, meaning it can rotate 360 degrees without limits, making it suitable for applications requiring continuous motion rather than precise angular positioning (like standard servos). It operates using Pulse Width Modulation (PWM) signals, typically from 500 μ s to 2500 μ s.

- **Control Signal:** The servo's speed and direction of continuous rotation are controlled by the PWM signal from your microcontroller or RC receiver.
- **Neutral Position:** A typical neutral pulse width (e.g., 1500 μ s) will stop the servo.
- **Rotation Direction/Speed:** Pulse widths shorter than the neutral pulse (e.g., 500 μ s to 1499 μ s) will cause rotation in one direction, with speed increasing as the pulse width decreases. Pulse widths longer than the neutral pulse (e.g., 1501 μ s to 2500 μ s) will cause rotation in the opposite direction, with speed increasing as the pulse width increases.

360°



Continuously rotate the servo, unable to control the angle

Figure 6: Visual representation of the 360-degree continuous rotation capability of the servo.

Demonstration Video:

Your browser does not support the video tag.

Video 1: A demonstration of the Wishiot TD-8125MG continuous rotation servo in operation, showing its range of motion and response to control signals.

7. MAINTENANCE

To ensure the longevity and optimal performance of your TD-8125MG servo, follow these maintenance guidelines:

- **Keep Clean:** Regularly clean the exterior of the servo to prevent dust and debris from accumulating, especially around the output shaft and mounting points.
- **Avoid Overloading:** Do not exceed the specified peak stall torque. Continuous overloading can lead to premature wear of the gears and motor.

- **Check Wiring:** Periodically inspect the servo wires and connectors for any signs of wear, fraying, or loose connections. Secure any loose connections immediately.
- **Environmental Protection:** While the servo is waterproof, avoid prolonged submersion or exposure to corrosive liquids. Ensure proper sealing if used in extremely wet conditions.
- **Storage:** Store the servo in a dry, cool environment away from direct sunlight and extreme temperatures.

8. TROUBLESHOOTING

If you encounter issues with your TD-8125MG servo, refer to the following common problems and solutions:

- **Servo Not Responding:**
 - Check all wiring connections for proper polarity and secure fit.
 - Verify the power supply voltage is within the 4.8V-7.2V range and provides sufficient current.
 - Ensure the control signal (PWM) from your receiver or microcontroller is correctly configured and being sent.
 - Test with a different servo or control channel if available to isolate the problem.
- **Erratic Movement or Jittering:**
 - Check for electrical noise or interference. Ensure signal wires are not running parallel to high-current power wires.
 - Verify the power supply is stable and not experiencing voltage drops under load.
 - Inspect for any physical obstructions preventing smooth movement of the servo horn.
- **Loss of Torque or Weak Performance:**
 - Ensure the servo is not continuously overloaded beyond its specified torque limits.
 - Check the power supply voltage; lower voltage will result in reduced torque.
 - Inspect for internal damage if the servo has been subjected to significant impact or stress.

9. WARRANTY AND SUPPORT

The Wishiot TD-8125MG Digital Servo is manufactured by Wishiot. For specific warranty information, technical support, or service inquiries, please refer to the retailer where the product was purchased or contact Wishiot directly through their official channels. Keep your purchase receipt as proof of purchase.

For additional resources and product information, you may visit theWishiot Store on Amazon.