SpeedyFPV MG995

SpeedyFPV MG995 Metal Gear High Torque Servo Instruction Manual

Model: MG995

For HPI XL Helicopter/Car/Boat and other RC applications

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your SpeedyFPV MG995 Metal Gear High Torque Servo. Designed for robust performance in various remote-controlled (RC) applications such as helicopters, cars, and boats, this servo offers precise control and durability. Please read this manual thoroughly before use to ensure optimal performance and longevity of your product.

2. Safety Information

- Always ensure the power supply voltage is within the specified operating range (4.8V - 7.2V). Exceeding this range can damage the servo.
- Avoid applying excessive force to the servo horn or output shaft, as this can strip gears or damage internal components.
- Keep the servo away from water, dust, and corrosive materials unless specifically designed for such environments.
- Ensure all connections are secure and correctly polarized to prevent short circuits or malfunction.
- This product is not a toy. It is recommended for users aged 16 years and up due to the technical nature of RC components.

3. Package Contents

Verify that all items listed below are included in your package:

- 1x MG995 Metal Gear Servo

- 4x Servo Horn Attachments (various shapes)
- 1x Mounting Hardware (screws)
- 4x Isolation Mounts (rubber grommets and brass eyelets)

Image 3.1: The SpeedyFPV MG995 Metal Gear Servo shown with its complete set of accessories, including various servo horns, mounting screws, and isolation mounts. This image displays all components you should find in the package.

4. Specifications

Detailed technical specifications for the MG995 Servo:

Feature	Specification
Dimensions	40mm x 19mm x 43mm (1.57 x 0.75 x 1.69 inches)
Net Weight	69g (2.4 ounces)
Operating Speed (4.8V no load)	0.17 sec / 60 degrees
Operating Speed (6.0V no load)	0.13 sec / 60 degrees
Stall Torque (4.8V)	13 kg-cm (180.5 oz-in)
Stall Torque (6.0V)	15 kg-cm (208.3 oz-in)
Operation Voltage	4.8 - 7.2 Volts
Gear Type	All Metal Gears

Feature	Specification
Connector Wire Length	11.81 inches (300mm)

5. Setup and Installation

Follow these steps to properly set up your MG995 servo:

1. **Mounting the Servo:**

   Secure the servo in your RC model's designated servo mount using the provided mounting hardware (screws, isolation mounts). The isolation mounts help reduce vibration transfer to the servo, prolonging its lifespan.

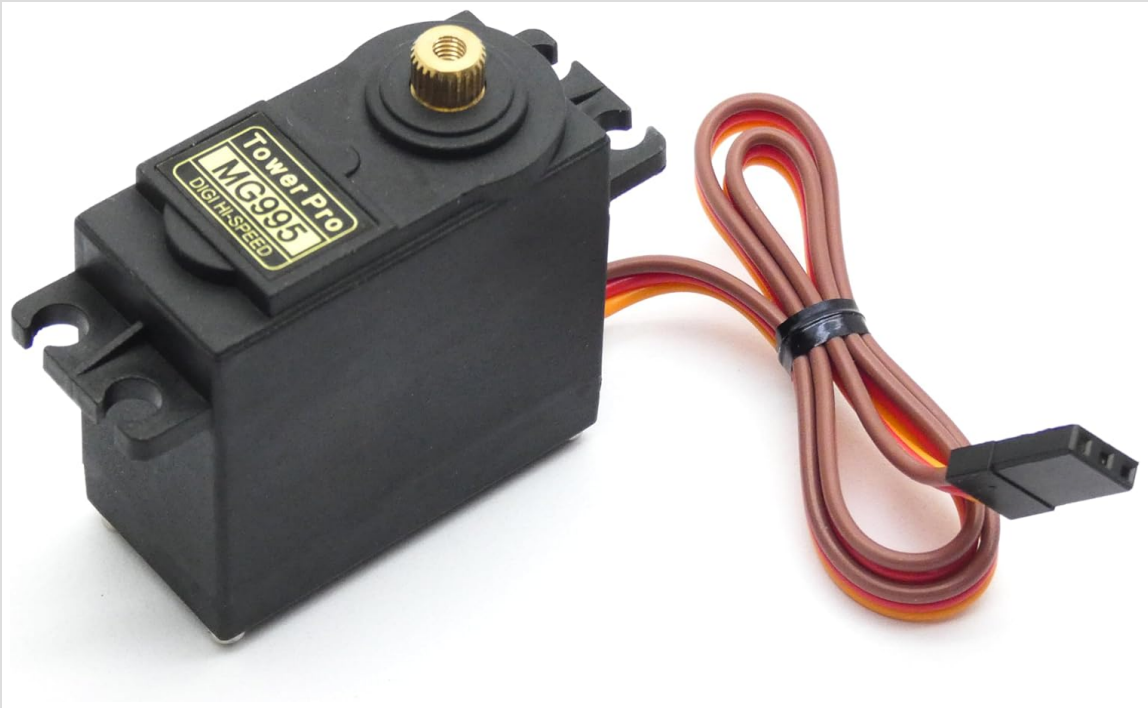

Image 5.1: A side view of the MG995 servo, illustrating its compact form factor suitable for mounting within various RC models. Ensure secure attachment using the provided hardware.

2. **Attaching Servo Horns:**

   Select the appropriate servo horn attachment for your application. Align the horn with the servo's output shaft and gently press it into place. Secure it with the small screw provided, typically inserted through the center of the horn into the servo shaft.

3. **Connecting the Servo:**

   Connect the servo's 3-wire connector to your receiver or flight controller. Pay close attention to the polarity. The standard color coding for servo wires is:

   - **Brown/Black:** Negative (Ground)
   - **Red:** Positive (Power, 4.8V - 7.2V)
   - **Orange/Yellow/White:** Signal

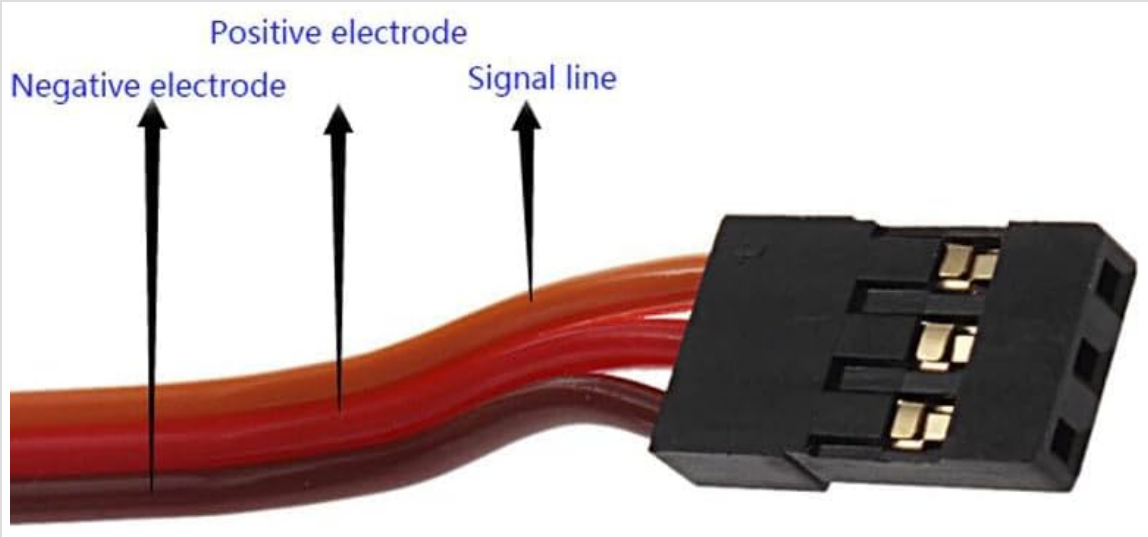

Image 5.2: A detailed view of the servo's 3-pin connector, clearly labeling the "Negative electrode" (brown/black wire), "Positive electrode" (red wire), and "Signal line" (orange/yellow/white wire). This diagram is crucial for correct wiring to avoid damage.

Refer to your receiver or flight controller manual for specific port assignments and wiring diagrams.

6. Operating Instructions

The MG995 servo operates based on a Pulse Width Modulation (PWM) signal received from your RC receiver or flight controller. The width of the pulse determines the angular position of the servo arm.

- **Power On:** Ensure all connections are correct before applying power to your RC system.
- **Calibration:** Many RC systems require servo calibration to define the neutral position and end points. Consult your RC transmitter or flight controller manual for calibration procedures.
- **Testing:** After calibration, gently test the servo's movement through its full range. Ensure there are no mechanical obstructions and that the movement is smooth.
- **Load Considerations:** While the MG995 is a high-torque servo, avoid continuously stalling it under heavy load, as this can lead to overheating and premature wear.

7. Maintenance

- **Cleaning:** Keep the servo casing and output shaft free from dirt, dust, and debris. Use a soft, dry cloth for cleaning.
- **Gear Inspection:** Periodically inspect the servo gears for signs of wear or damage. While metal gears are durable, extreme impacts can still cause issues.
- **Lubrication:** The internal gears are pre-lubricated. Avoid applying additional lubricants unless specifically recommended by the manufacturer, as this can attract dirt.
- **Storage:** Store the servo in a dry, cool environment away from direct sunlight and extreme temperatures.

8. Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Servo does not move	No power, incorrect wiring, no signal, damaged servo.	Check power supply and connections. Verify signal from receiver/controller. Test with a known working servo or servo tester.
Erratic or jerky movement	Insufficient power, signal interference, damaged gears, loose connections.	Ensure adequate power supply. Check for signal interference. Inspect gears for damage. Secure all connections.
Weak torque or inability to hold position	Under-voltage, excessive load, worn gears, internal damage.	Verify power supply voltage. Reduce mechanical load. Inspect gears. If problem persists, servo may need replacement.
Servo makes buzzing noise	Normal operation (holding position), mechanical binding, worn gears.	A slight buzz when holding position is normal. If loud or constant, check for mechanical binding or inspect gears for wear.

9. Warranty and Support

SpeedyFPV stands behind the quality of its products. For warranty information, technical support, or assistance with your MG995 servo, please contact the seller or SpeedyFPV customer service through the platform where the product was purchased. Please have your purchase details readily available.
For further assistance, you may also refer to the official SpeedyFPV website or community forums for additional resources and troubleshooting tips.