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Stemedu BLS-HV70MG

Stemedu BLS-HV70MG 70KG Brushless Digital RC Servo Instruction Manual

Model: BLS-HV70MG | Brand: Stemedu

INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Stemedu BLS-HV70MG 70KG Brushless Digital RC Servo. This high-performance servo is designed for 1:8 and 1:10 scale RC cars, offering high torque, speed, and durability. It features a brushless motor, all-metal gears, and an IP67 waterproof rating, ensuring reliable operation in various conditions.

PRODUCT FEATURES

- **70KG Brushless Servo:** High operating voltage from 4.8V to 8.4V DC.
- **High Speed:** No-load speed of 0.12sec/60° at 8.4V.
- **High Torque:** Stall torque of 71 Kg-cm at 8.4V.
- **Waterproof Performance:** IP67 rated for reliable use in wet conditions.
- **All-Metal Construction:** Full aluminum case, stainless steel metal gears for precision, reduced noise, and high operating accuracy.
- **Control Angle:** Controllable angle range from 0 to 180 degrees.

WHAT'S IN THE BOX

The package includes the following components:

- 1 x Stemedu BLS-HV70MG 70KG Brushless Digital RC Servo
- Multiple plastic servo arms (various shapes)
- 1 x 25T metal servo horn
- Mounting screws and brass inserts



Image: The BLS-HV70MG servo shown with its complete set of accessories, including various plastic servo arms, a red metal 25T servo horn, mounting screws, and brass inserts.

SETUP INSTRUCTIONS

1. **Mounting the Servo:** Securely mount the servo into your RC vehicle's servo tray using the provided screws and brass inserts. Ensure the servo is firmly seated to prevent movement during operation.
2. **Connecting to Receiver/BEC:** Connect the servo's 3-pin connector to the appropriate channel on your RC receiver. If using a separate Battery Eliminator Circuit (BEC), ensure it is properly connected and configured to supply the recommended voltage range (4.8V-8.4V) to the servo.
3. **Attaching Servo Horn:** With the RC system powered on and the servo centered (usually by turning on the transmitter and receiver first), attach the desired servo horn to the servo output shaft. Ensure the horn is aligned correctly for your application. The included 25T metal servo horn is recommended for high-stress applications.
4. **Initial Calibration:** Before full operation, perform a basic calibration to ensure the servo responds correctly to your transmitter inputs. Check for full range of motion and proper centering.



Image: A detailed view of the Stemedu BLS-HV70MG servo, showing its compact design and wiring for connection.

OPERATING INSTRUCTIONS

The BLS-HV70MG servo operates with a control angle of 180 degrees, responding to standard PWM signals. The pulse width range for control is typically from 500 to 2500 microseconds, with 1500 microseconds representing the neutral position.

- **Voltage Range:** This servo is designed for high voltage (HV) operation, accepting inputs from 4.8V to 8.4V. Operating within this range ensures optimal performance and longevity.
- **Speed and Torque:** The servo's speed and torque vary with the input voltage. Higher voltages (e.g., 8.4V) will result in faster speeds (0.12sec/60°) and higher torque (71 Kg-cm).
- **Control:** Use your RC transmitter to send control signals to the servo. Adjust the trim and sub-trim settings on your transmitter for precise centering and endpoint adjustments.

Control Angle 180 Degree



Image: A visual representation of the servo's 180-degree control angle, indicating the pulse width modulation (PWM) values corresponding to different positions.

Video: An official product video demonstrating the features and performance of the Stemedu 70KG Brushless Servo, including its waterproof capabilities and high-speed operation.

MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your servo.

- **Waterproofing:** The servo has an IP67 waterproof rating. While it can withstand splashes and temporary immersion, avoid prolonged submersion or high-pressure water jets. After exposure to water, allow the servo to dry completely before storage.
- **Gear Inspection:** Periodically inspect the metal gears for any signs of wear, damage, or debris. Clean any accumulated dirt or grime.
- **Cleaning:** Use a soft, dry cloth to clean the exterior of the servo. Avoid using harsh chemicals or solvents.

- **Storage:** Store the servo in a dry, cool place away from direct sunlight and extreme temperatures.



Image: The BLS-HV70MG servo is shown amidst splashing water, illustrating its IP67 waterproof design, which protects it from dust and water ingress.

TROUBLESHOOTING

- **Servo Not Responding:**

- Check all connections between the servo, receiver, and power source.
- Ensure the receiver and transmitter are properly bound and powered on.
- Verify the power supply voltage is within the servo's operating range (4.8V-8.4V).

- **Inconsistent Centering:**

- Adjust the sub-trim on your transmitter.
- Check for any mechanical binding or obstruction in the linkage.
- Ensure the servo horn is securely attached and not stripped.

- **Excessive Noise or Grinding:**

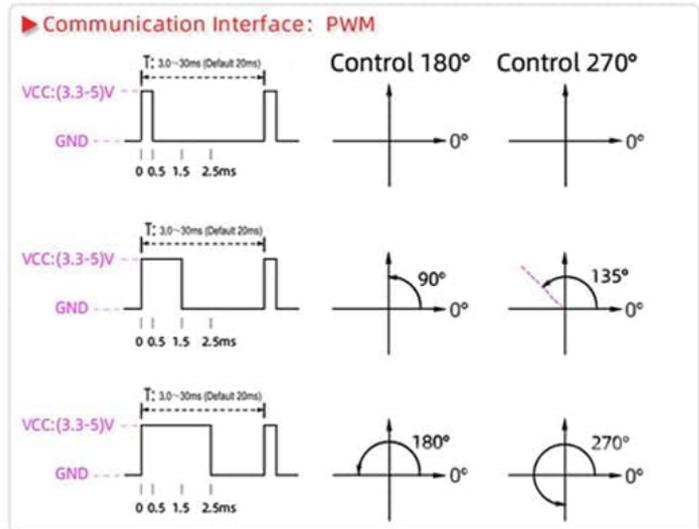
- Inspect the gears for damage or foreign objects.
- Ensure the servo is not under excessive load or binding.

- **Overheating:**

- Reduce the load on the servo if possible.
- Ensure adequate ventilation around the servo.
- Verify the input voltage is not too high.

SPECIFICATIONS

Item	Specification
Command Signal	Pulse Width Modification (PWM)
Amplifier Type	Digital Controller
Pulse Width Range	500-2500 μ sec
Neutral Position	1500 μ sec
Running Degree	180 \pm 3 $^{\circ}$ (when 500-2500 μ sec)
Dead Band Width	3 μ sec
Rotating Direction	Counterclockwise (when 1000-2000 μ sec)
Operate Voltage	4.8V ~ 8.4V
No-load Speed (4.8V)	0.21 sec/60 $^{\circ}$
No-load Speed (6.0V)	0.17 sec/60 $^{\circ}$
No-load Speed (7.4V)	0.14 sec/60 $^{\circ}$
No-load Speed (8.4V)	0.12 sec/60 $^{\circ}$
Running Current (4.8V-8.4V)	500mA-1200mA
Peak Stall Torque (4.8V)	58 Kg-cm
Peak Stall Torque (6.0V)	62 Kg-cm
Peak Stall Torque (7.4V)	68 Kg-cm
Peak Stall Torque (8.4V)	71 Kg-cm
Stall Current (4.8V-8.4V)	8000mA-13000mA
Product Dimensions	1.57 x 0.79 x 1.57 inches (40 x 20 x 40 mm)
Item Weight	3.2 ounces (92.2g)
Waterproof Rating	IP67



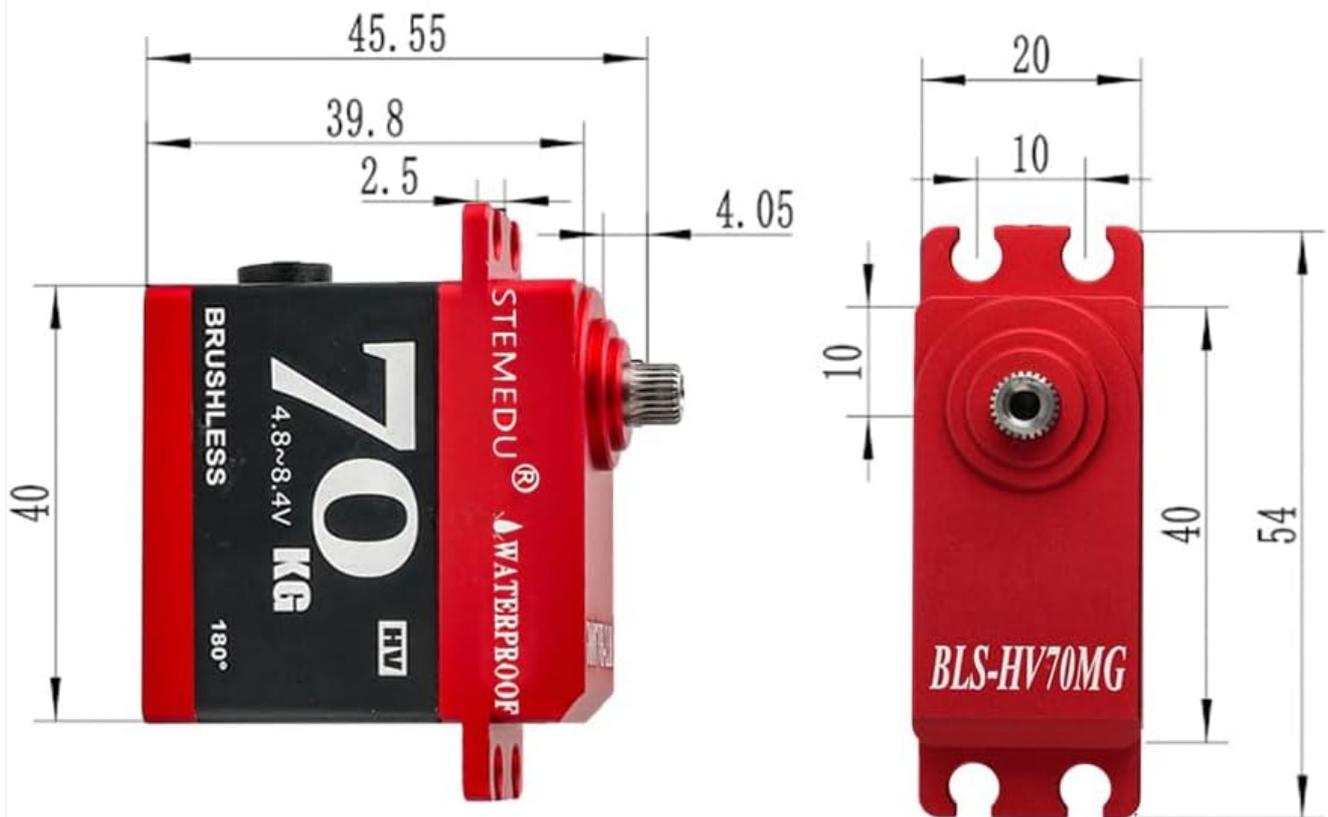
Specifications

Item	Specification
Command signal	Pulse width modification
Amplifier type	Digital controller
Pulse width range	500~2500 μ sec
Neutral position	1500 μ sec
Running degree	180 \pm 3°(when 500~2500 μ sec)
Dead band width	3 μ sec
Rotating direction	Counterclockwise (when 1000~2000 μ sec)

Item	Specification			
	4.8V	6.0V	7.4V	8.4V
Operate voltage	4.8V	6.0V	7.4V	8.4V
No load speed	0.21sec/50°	0.17sec/60°	0.14sec/50°	0.12sec/60°
Running current	500mA-800mA	500mA-800mA	700mA-1200mA	700mA-1200mA
Peak stall torque	58kg.cm	62kg.cm	68kg.cm	71kg.cm
Stall current	8000-9000mA	9000-10000mA	10000-11000mA	11000-13000mA

Image: A table presenting the comprehensive specifications of the BLS-HV70MG servo, detailing its performance characteristics under different voltage conditions.

Dimension



Unit: mm

Image: A technical diagram illustrating the exact dimensions of the BLS-HV70MG servo in millimeters, useful for fitment and installation.



Image: The BLS-HV70MG servo on a digital scale, showing its weight of 92.2 grams, indicating its robust yet lightweight construction.

WARRANTY AND SUPPORT

Stemedu products are manufactured to high-quality standards. For any issues or questions regarding your BLS-HV70MG servo, please refer to the seller's return policy or contact Stemedu customer support through the platform where the product was purchased. Please retain your proof of purchase for warranty claims.