

LewanSoul LD-20MG

LewanSoul LD-20MG / HPS-2018MG 20KG High Torque Digital RC Servo Instruction Manual

Model: LD-20MG / HPS-2018MG | Brand: LewanSoul

1. PRODUCT OVERVIEW

The LewanSoul LD-20MG / HPS-2018MG is a high-performance digital servo motor designed for various RC applications, including 1/6, 1/8, 1/10, and 1/12 scale RC cars, robots, and other DIY projects. It features a robust design with a full metal gear set, high torque output, and IP67 waterproof rating, ensuring reliable operation in challenging environments.

- **High Torque Output:** Delivers a maximum torque of 20KG.CM at 7.4V, supported by an included metal servo arm for enhanced power transmission.
- **Durable Construction:** Features a full metal gear set and dual-ball bearings for exceptional performance, stability, and minimal noise. The anodized aluminum case aids in heat dissipation and reduces power consumption.
- **Waterproof Design:** Crafted with high precision and thorough sealing, providing IP67 water resistance, allowing operation even with water splashes.
- **Precise Control:** Integrates a high-precision potentiometer for improved accuracy and linearity, contributing to an extended service life.
- **Versatile Application:** Ideal for a wide range of model DIY projects and RC vehicles.

LD-20MG

Strong Torque Digital Servo

Red metal shell/

Strong heat dissipation ability/

Super cool appearance



Image: Key features of the LewanSoul LD-20MG / HPS-2018MG Digital Servo, highlighting its high torque, metal case, and waterproof design.

2. WHAT'S IN THE BOX

Upon opening the package, you should find the following components:

- 1 x LewanSoul LD-20MG / HPS-2018MG Digital Servo Motor
- 1 x 25T Metal Servo Horn
- Various plastic servo horns (cross, star, single arm)
- Mounting screws and rubber grommets

What's in the Box



Image: All components included with the LewanSoul LD-20MG servo, including the servo motor, metal servo horn, plastic horns, and mounting hardware.

3. SETUP INSTRUCTIONS

Follow these steps to properly install and connect your LewanSoul LD-20MG / HPS-2018MG Digital Servo:

1. Mounting the Servo:

Secure the servo motor into the designated mounting location on your RC vehicle or robot. Use the provided mounting screws and rubber grommets to minimize vibration and ensure a firm fit. Ensure the servo is oriented correctly for its intended function (e.g., steering, articulation).

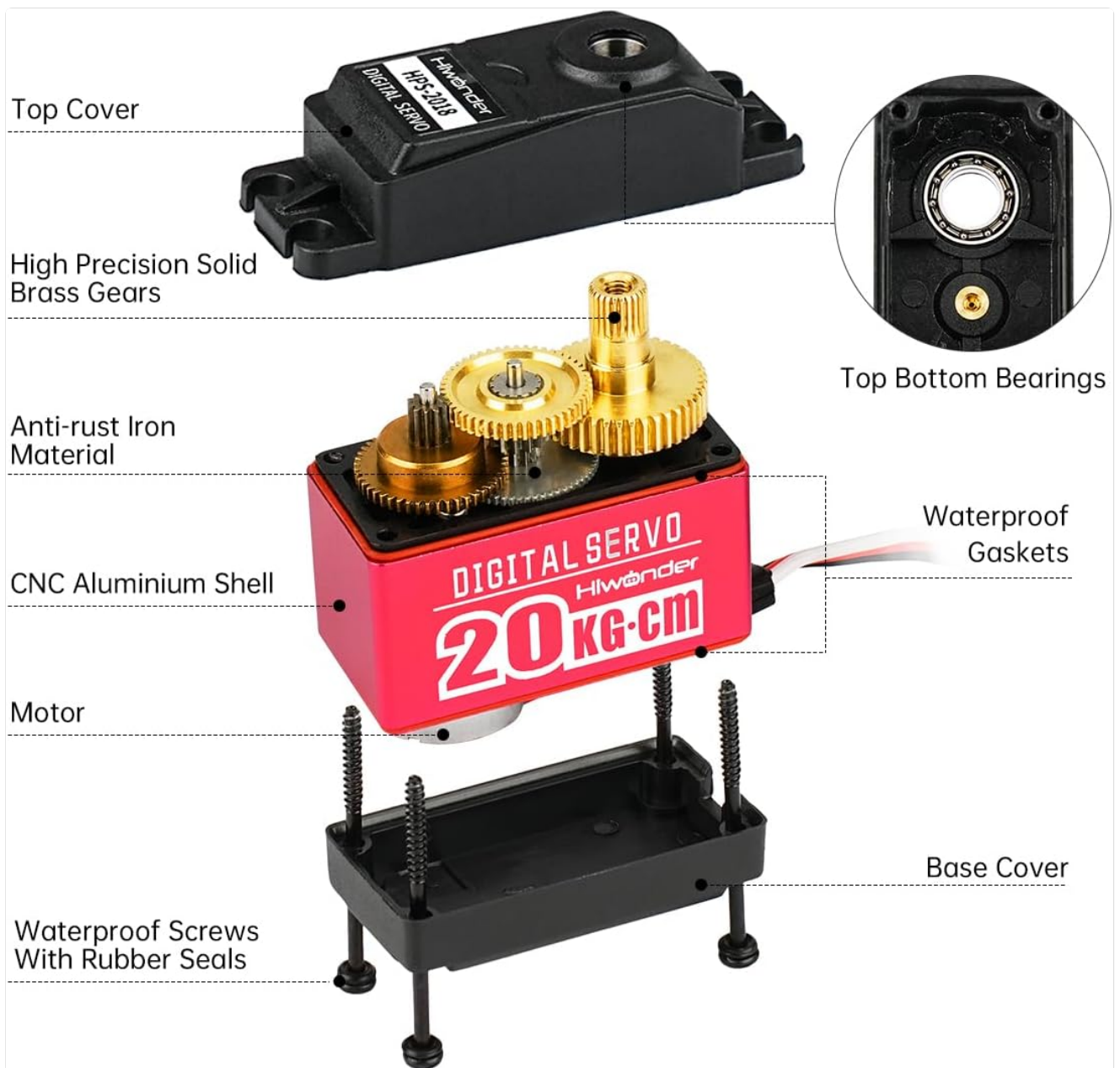


Image: The LewanSoul LD-20MG servo with the 25T metal servo horn attached, ready for installation.

2. Attaching the Servo Horn:

Select the appropriate servo horn (metal or plastic) for your application. Align the horn with the servo spline and press it firmly into place. Secure it with the small screw provided, typically through the center of the horn. Ensure the horn is centered before tightening the screw, especially for steering applications.

3. Connecting to the Receiver/Controller:

Connect the servo's 3-wire cable to the appropriate channel on your RC receiver or servo controller. The standard color coding is usually:

- **Brown/Black:** Ground (Negative Pole)
- **Red:** Power (Positive Pole)
- **Orange/Yellow/White:** Signal

Ensure the polarity is correct to prevent damage to the servo or receiver. Refer to your receiver/controller manual for specific channel assignments.

New Servo / SIZE

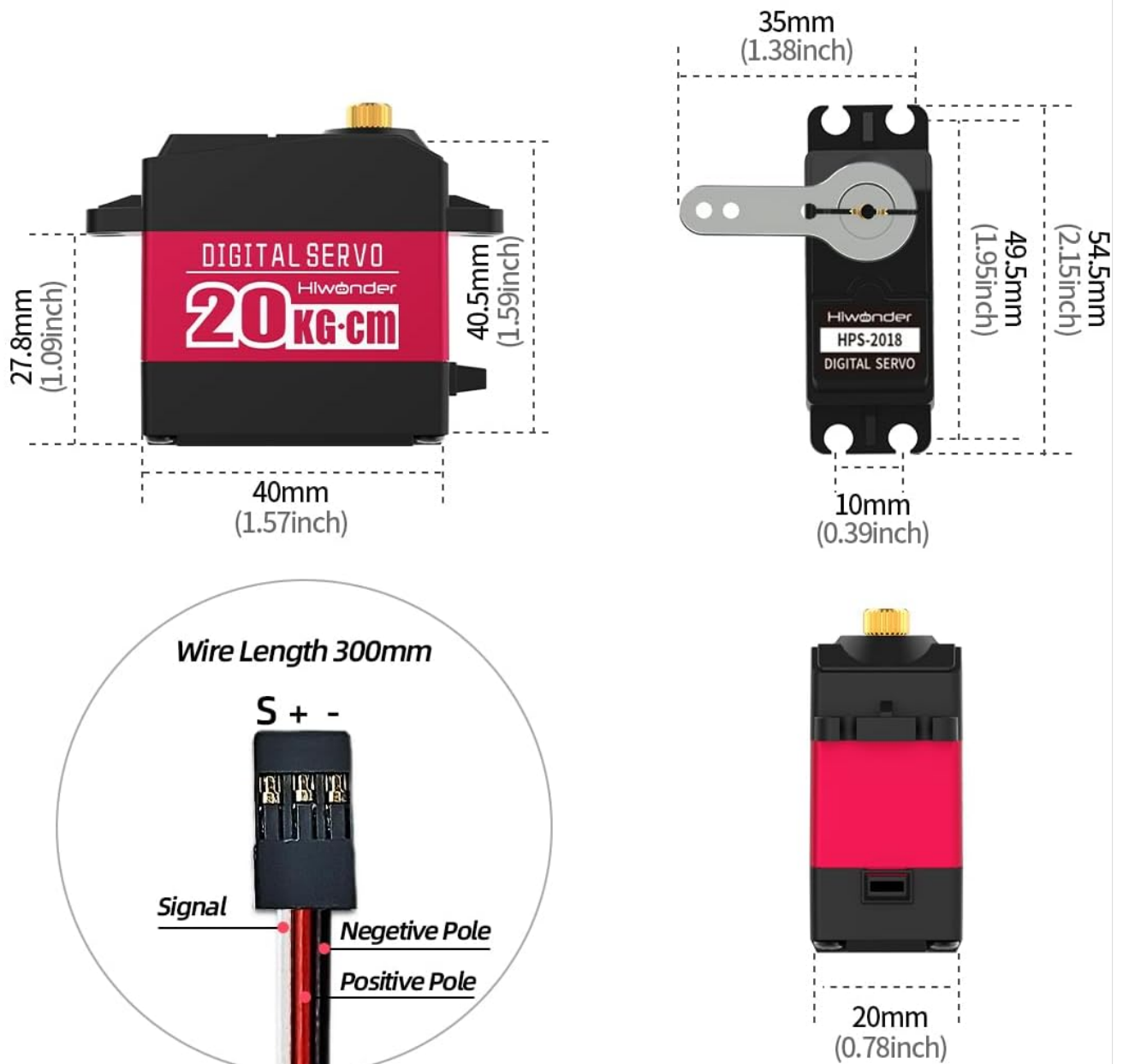


Image: Diagram showing the physical dimensions of the servo and the standard 3-wire connection for signal, positive, and negative poles.

4. Power Supply:

Ensure your power supply (battery) can provide sufficient voltage and current for the servo. This servo operates within a voltage range of 6-8.4V. Inadequate power can lead to inconsistent performance or damage.

4. OPERATING INSTRUCTIONS

The LewanSoul LD-20MG / HPS-2018MG is a digital servo controlled by Pulse Width Modulation (PWM) signals. The control angle is 180 degrees.

1. PWM Control:

Servos are controlled by sending a series of electrical pulses through the signal wire. The width of these pulses determines the position of the servo arm.

- A pulse width of approximately 500µs typically corresponds to 0 degrees.
- A pulse width of approximately 1500µs typically corresponds to 90 degrees (center position).

- A pulse width of approximately 2500μs typically corresponds to 180 degrees.

The exact pulse widths may vary slightly depending on your controller and calibration.



Image: Diagram illustrating the 180-degree rotation range of the servo and corresponding pulse width signals (500μs to 2500μs).

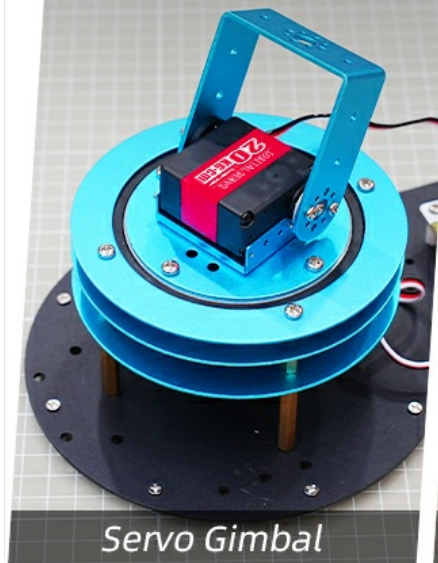
2. Initial Calibration:

Before first use, it is recommended to calibrate the servo's center position using your RC transmitter or servo tester. This ensures the servo arm is at its neutral position when the control input is neutral.

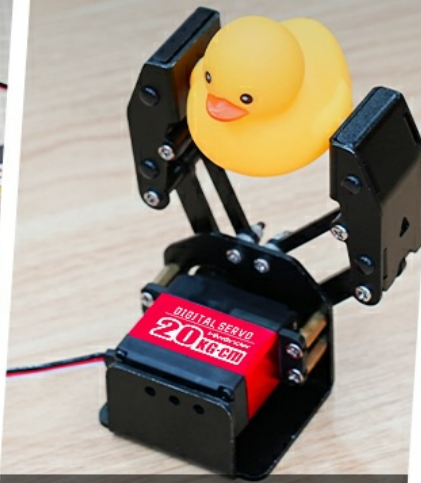
3. Application Specifics:

For RC cars, the servo typically controls steering. For robots, it can be used for various joint movements, grippers, or camera gimbals. Always ensure the servo's movement range is not mechanically obstructed, as this can lead to overheating and damage.

Multi-Scene Application



Servo Gimbal



Gripper Application



Ideal For RC Car

Image: Examples of the servo's application in a servo gimbal, a gripper, and an RC car, demonstrating its versatility.

Official Product Video: LD-20MG 20KG Digital Servo

Your browser does not support the video tag.

Video: An official video from LewanSoul demonstrating the features and operation of the LD-20MG 20KG Digital Servo. This video highlights its metal shell, strong heat dissipation, metal gear, high accuracy, and PC software debugging capabilities for angle control within 0-180 degrees, along with abundant tutorials and programming examples.

5. MAINTENANCE

Proper maintenance will extend the lifespan and ensure optimal performance of your servo motor:

- **Regular Cleaning:** Keep the servo housing free from dirt, dust, and debris. Use a soft, dry cloth to wipe the exterior. For stubborn dirt, a slightly damp cloth can be used, but ensure no moisture enters the servo.
- **Check Connections:** Periodically inspect all electrical connections (power, signal) for looseness or corrosion. Secure any loose wires.
- **Inspect Gears:** While the servo features metal gears, excessive force or impacts can still cause damage. If you notice unusual noises or jerky movements, inspect the gears for wear or damage.
- **Avoid Overloading:** Do not subject the servo to loads beyond its specified torque rating. Continuous stalling or excessive force can lead to overheating and premature failure.
- **Storage:** When not in use for extended periods, store the servo in a dry, cool environment away from direct sunlight and extreme temperatures.

Anodized Aluminum Case.
Enhance Heat Dissipation.
Ensure the servo motor works
well in all situations.



Waterproof Protection



Image: The anodized aluminum case of the LewanSoul LD-20MG servo, designed for heat dissipation, and an illustration of its waterproof protection.

6. TROUBLESHOOTING

If you encounter issues with your LewanSoul LD-20MG / HPS-2018MG servo, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Servo does not move or respond.	- Incorrect wiring (power/signal). - Insufficient power supply. - Damaged servo or controller. - Mechanical obstruction.	- Verify all connections are correct and secure. - Check battery voltage and current capacity. - Test with a different servo or controller if available. - Ensure no physical objects are blocking the servo's movement.
Servo moves erratically or jitters.	- Signal interference. - Loose connections. - Damaged potentiometer or gears. - Low voltage.	- Ensure signal wires are away from power wires. - Check all connections for tightness. - Inspect gears for damage. - Verify power supply is stable and within range.
Servo overheats.	- Excessive load or continuous stalling. - Incorrect voltage. - Internal friction/damage.	- Reduce load or ensure free movement. - Confirm power supply voltage is correct. - If problem persists, the servo may be faulty.
Reduced torque or speed.	- Low voltage. - Worn gears. - Internal damage.	- Check power supply voltage. - Inspect gears for wear. - Consider replacing the servo if performance does not improve.

7. SPECIFICATIONS

Detailed technical specifications for the LewanSoul LD-20MG / HPS-2018MG Digital Servo:

Feature	Value
Model Number	LD-20MG / HPS-2018MG
Stall Torque	20kg.cm (7.4V)
No-load Speed	0.20sec/60° (7.4V)
Control Angle	180°
Operating Voltage	6-8.4V
Gear Type	Brass Gear (Full Metal)
Stall Current	2.4-3A
No-load Current	100mA

Feature	Value
Servo Accuracy	0.3°
PWM Pulse Width Range	500-2500μs (corresponding to 0-180°)
Dimensions	40 x 20 x 40.5mm (1.57 x 0.79 x 1.59 inches)
Weight	68g (0.15 pound)
Wire Length	300mm
Waterproof Rating	IP67

Product Parameters

Stall torque
20kg.cm 7.4V

No-load speed
0.20sec/60° 7.4V

Size	Weight
40*20*40.5mm	66g

Rotation	Voltage
0-180°	6-8.4V

Stall current	Wire length
2.4-3A	300mm

No-load current	Servo accuracy
100mA	0.3°



Gear type
Brass gear

Control method
PWM pulse width control

PWM pulse width range
500~2500us, corresponding to 0~180°

Image: A table summarizing the key product parameters and specifications of the LewanSoul LD-20MG servo.

8. WARRANTY AND SUPPORT

LewanSoul products are designed for reliability and performance. For specific warranty details, please refer to the

warranty card included with your product or visit the official LewanSoul website. If you encounter any issues or require technical assistance, please contact LewanSoul customer support through their official channels. They offer comprehensive support and resources to ensure your satisfaction.

You can often find additional resources, tutorials, and FAQs on the manufacturer's website or community forums dedicated to RC and robotics.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question