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› Savox SW1210SGP Waterproof High Voltage Coreless Digital Servo Instruction Manual

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Model: SW1210SGP | Brand: Savox

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Savox SW1210SGP Waterproof High Voltage Coreless Digital Servo. The SW1210SGP is engineered for demanding applications, featuring a robust design suitable for various RC vehicles, especially in challenging environmental conditions. Please read this manual thoroughly before using the product to ensure optimal performance and longevity.



Figure 1: The Savox SW1210SGP Waterproof High Voltage Coreless Digital Servo. This image displays the servo unit, which is predominantly blue with a black top casing, featuring the Savox logo and model number. An orange and brown wire extends from the side, indicating its connection interface. The output shaft is visible on the top.

2. KEY FEATURES

- **Waterproof Construction:** Designed to withstand harsh elements, making it suitable for use in rain, sleet, or snow.
- **High Voltage (HV) Operation:** Capable of operating with high voltage power sources for increased performance.
- **Coreless Motor:** Provides smooth operation and quick response.
- **Digital Circuitry:** Offers precise control and holding power.
- **Strong Steel Gears:** Ensures durability and reliability under stress.
- **Soft Start Function:** Helps prevent sudden jolts and extends gear life.

3. TECHNICAL SPECIFICATIONS

Parameter	Value
Torque @ 6.0V	20.0 kg-cm (277.7 oz-in)
Torque @ 7.4V	32.0 kg-cm (444.4 oz-in)
Speed @ 6.0V	0.15 sec/60°
Speed @ 7.4V	0.13 sec/60°
Dimensions (L x W x H)	40.6 x 20.7 x 42.0 mm
Weight	71g

Parameter	Value
Gear Type	Steel
Motor Type	Coreless
Operating Voltage	6.0V - 7.4V (High Voltage)

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your servo. Follow these steps carefully:

- Mounting the Servo:** Securely mount the servo in your RC vehicle using appropriate servo mounts and screws. Ensure there is no binding or excessive force on the servo case during mounting.
- Connecting to Receiver:** Connect the servo's signal cable (typically a three-wire connector: signal, power, ground) to the designated servo channel on your RC receiver. Refer to your receiver's manual for correct channel assignment.
- Power Supply:** Ensure your power supply (battery/BEC) is capable of providing the necessary voltage and current for high-voltage servos (6.0V to 7.4V). Inadequate power can lead to poor performance or damage.
- Linkage Setup:** Attach the servo horn (not included, choose one appropriate for your application) to the servo output shaft. Connect the linkage to the control surface or mechanism. Adjust linkages to ensure smooth, free movement without binding throughout the full range of motion. Avoid over-tightening screws on the servo horn.
- Centering:** Before connecting linkages, power on your RC system and ensure the servo is centered. Adjust the trim on your transmitter if necessary to achieve a perfect center position.

***Important:** Always perform a range check after installation to ensure proper function and signal integrity.*

5. OPERATING GUIDELINES

The Savox SW1210SGP servo is designed for reliable operation. Adhere to the following guidelines:

- Voltage Range:** Operate the servo within its specified voltage range of 6.0V to 7.4V. Exceeding this range can cause irreversible damage.
- Environmental Use:** While waterproof, the servo is designed to resist splashes and temporary immersion. It is not intended for prolonged underwater operation. Ensure all connections are dry before powering on after exposure to moisture.
- Avoid Overloading:** Do not attempt to force the servo past its mechanical limits or apply excessive external force to the servo horn. This can strip gears or damage the motor.
- Temperature:** Avoid operating the servo in extreme temperatures. Excessive heat can degrade performance and shorten lifespan.
- Signal Quality:** Ensure a clean and stable signal from your receiver. Poor signal quality can lead to erratic servo behavior.

6. MAINTENANCE

Regular maintenance helps ensure the longevity and consistent performance of your servo.

- Cleaning:** After use, especially in dirty or wet conditions, gently clean the exterior of the servo with a soft, dry cloth. Avoid using solvents or harsh chemicals.
- Inspect Gears:** Periodically check the servo gears for any signs of wear, damage, or foreign debris. If necessary,

carefully open the servo case (if you are experienced) to inspect and clean the gears.

- **Check Connections:** Ensure all electrical connections (servo wire to receiver) are secure and free from corrosion or damage.
- **Lubrication:** The gears are pre-lubricated from the factory. If opening the servo for inspection, a small amount of high-quality plastic-safe grease can be applied to the gears if needed.
- **Storage:** Store the servo in a clean, dry environment away from extreme temperatures and direct sunlight.

7. TROUBLESHOOTING

If you encounter issues with your Savox SW1210SGP servo, consult the following table for common problems and solutions:

Problem	Possible Cause	Solution
Servo does not respond or move.	◦ No power to receiver/servo. ◦ Incorrect connection to receiver. ◦ Damaged servo wire or internal components. ◦ Transmitter not powered on or bound.	◦ Check battery connections and power switch. ◦ Verify servo is plugged into the correct channel and orientation. ◦ Inspect servo wire for cuts or damage. Test with another servo if possible. ◦ Ensure transmitter is on and properly bound to the receiver.
Erratic or jerky movement.	◦ Low battery voltage. ◦ Interference (radio or electrical). ◦ Binding in linkages. ◦ Damaged gears.	◦ Charge or replace batteries. Ensure BEC can supply enough current. ◦ Check for sources of interference. Ensure antenna is properly positioned. ◦ Disconnect linkages and test servo. Adjust or replace binding components. ◦ Inspect gears for damage.
Servo makes buzzing noise or overheats.	◦ Binding in linkages or control surface. ◦ Servo is stalled or under constant load. ◦ Incorrect servo horn length.	◦ Ensure linkages move freely. Adjust endpoints on transmitter if necessary. ◦ Reduce load on the servo. Ensure it's not fighting against a mechanical stop. ◦ Use a shorter servo horn if the load is too high.

8. WARRANTY AND SUPPORT

For specific warranty information and technical support, please refer to the official Savox website or contact your authorized Savox dealer. Keep your purchase receipt as proof of purchase.

Note: *Unauthorized modifications or improper use of the product may void the warranty.*

ASK A QUESTION ABOUT THIS MANUAL

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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.

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