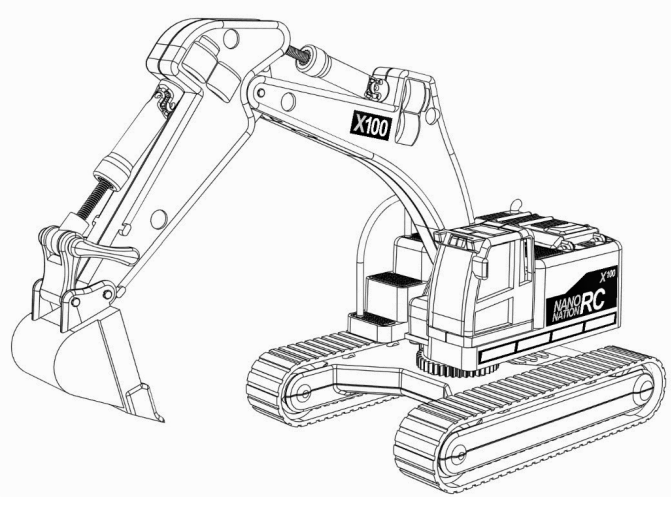
NANO NATION RC™ // NANO X100™



1:64 Fully-Functional & Proportional Excavator

Scan the QR code for manuals, instructional videos, parts, and more.

PRODUCT MANUAL

NOTICE

All instructions, warranties, and related documents are subject to change at the sole discretion of NANO NATION RC. For the latest product information, visit our website and check the support or resources section for this product.

MEANING OF SPECIAL LANGUAGE

The following terms are used throughout this manual to indicate different levels of potential risk when operating this product:

WARNING: Ignoring these instructions may result in significant property damage, collateral damage, or serious injury. In some cases, there is a high risk of minor injury.

CAUTION: Failure to follow these guidelines may lead to property damage and could result in serious injury.

NOTICE: Not following these instructions may cause property damage but carries little to no risk of injury.

WARNING: Read this entire manual to fully understand the features of this product before operation. Improper use can result in damage to the product, personal property, or serious injury.

This is a high-performance hobby product that requires caution, common sense, and basic mechanical skills. Operating it irresponsibly can lead to injury or property damage. This product is not intended for use by children without direct adult supervision. Only use compatible components, and do not modify the product beyond the instructions provided by NANO NATION RC.

This manual includes important safety, operation, and maintenance instructions. Carefully read and follow all guidelines before assembly, setup, or use to ensure safe and proper operation.

Age Recommendation: This is not a toy. Not for children under 14 years of age.

SAFETY PRECAUTIONS AND WARNINGS

As the operator of this product, you are solely responsible for using it in a safe manner that does not endanger yourself or others or cause damage to property.

This model is controlled by a radio signal that may experience interference from external sources beyond your control. Such interference can cause temporary loss of control. Always maintain a safe distance around your model to prevent product damage or injury.

- Avoid operating your model with low batteries.
- Always use your model in safe spaces, away from full-size vehicles, traffic, and people.
- Never operate the model on streets or in populated areas.
- Carefully follow all instructions and warnings for this product and any optional accessories (chargers, battery packs, cork, etc.).
- Keep all chemicals, small parts, and electrical components out of the reach of children.

- Never place any part of the model in your mouth, as it may cause serious injury or even death.
- Use caution when handling tools and sharp instruments.
- Be mindful during maintenance, as some parts may have sharp edges.
- After operation, avoid touching components such as the motor, electronic speed control, PCB, or battery, as they can become extremely hot and may cause burns.
- Do not insert fingers or objects into rotating or moving parts, as this may result in injury or damage.
- Always turn on the transmitter before powering on the model's receiver. When shutting down, turn off the receiver before turning off the transmitter.
- Place the model in a safe place when testing radio equipment to prevent unintended movement and product damage.
- If using a storage case; please ensure that both the transmitter and receiver are powered off before storing.

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BOX CONTENTS

INCLUDED COMPONENTS

Vehicle	NANO X100
Transmitter	X100 Transmitter
Charger	USB Type-C
Vehicle Battery	15C 100mAh LiPo
Transmitter Battery	15C 100mAh LiPo
Spare Parts	Misc

SPECIFICATIONS

Length	6.5" (165mm)
Width	2.6" (66mm)
Height	4.9" (124mm)
Weight	10 oz (284g)

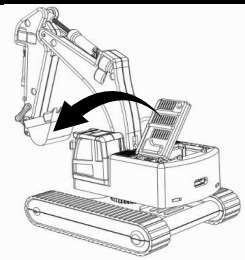
CONNECTING THE BATTERIES

Vehicle Battery Installation

OPEN THE BATTERY HATCH

The X100 battery hatch uses a snap fit to close.

Pinch in and pull up on the battery cover to open.

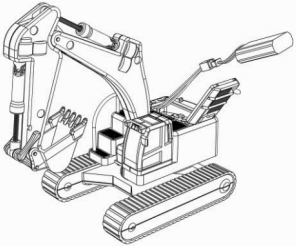


INSTALL THE BATTERY

Connect the battery to the X100 wire harness.

Neatly and carefully tuck wires into X100 body.

Close battery hatch.

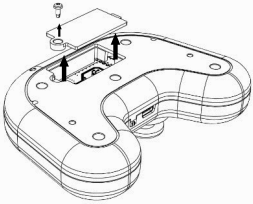


Transmitter Battery Installation

Remove Hatch Cover

Use a phillips screwdriver to remove the m2 screw.

The battery hatch cover can now be removed.

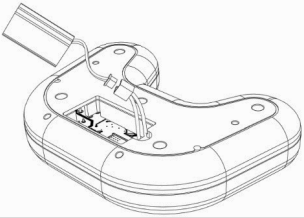


INSTALL THE BATTERY

Connect the battery to the wire harness.

Neatly and carefully tuck wires into transmitter.

Close battery hatch.



USB CHARGING WARNINGS

WARNING: Failure to use this product with caution and follow the warnings below may result in malfunction, electrical failures, overheating, FIRE, and potentially serious injury or property damage.

- NEVER leave batteries unattended while charging.
- NEVER charge batteries overnight.
- Never attempt to charge dead, damaged, or wet battery packs.
- Never charge a battery pack that contains different types of batteries.
- Never allow children under 14 years old to charge battery packs.
- Never charge batteries in extremely hot or cold environments or in direct sunlight.
- Never charge a battery if the cable is pinched or shorted.
- Never connect the charger if its power cable is pinched or shorted.
- Never attempt to dismantle the charger or use a damaged charger.
- Always use rechargeable batteries specifically designed for this type of charger.
- Always inspect the battery before charging.
- Always keep batteries away from materials that could be affected by heat.
- Always monitor the charging process and have a fire extinguisher nearby.
- Always stop charging immediately if the battery becomes hot to the touch or begins to swell.
- Always connect the positive (+) and negative (–) leads correctly.
- Always disconnect the battery after charging and allow the charger to cool between uses.
- Always charge in a well-ventilated area.
- Always stop using the product and contact NANO NATION RC if a malfunction occurs.
- Only charge rechargeable batteries. Charging non-rechargeable batteries can cause them to burst, leading to injury or property damage.
- The USB outlet should be installed near the equipment and remain easily accessible.

CAUTION: Always verify that the battery you are charging is compatible with this charger. Using an incompatible battery can cause excessive heat, malfunctions, and potential injury or property damage. If you have any questions about compatibility, contact NANO NATION RC or an authorized retailer.

CAUTION: If at any time during the charge process the battery pack becomes hot or begins to puff, disconnect the battery immediately and discontinue the charge process as batteries can cause fire, collateral damage and injuries.

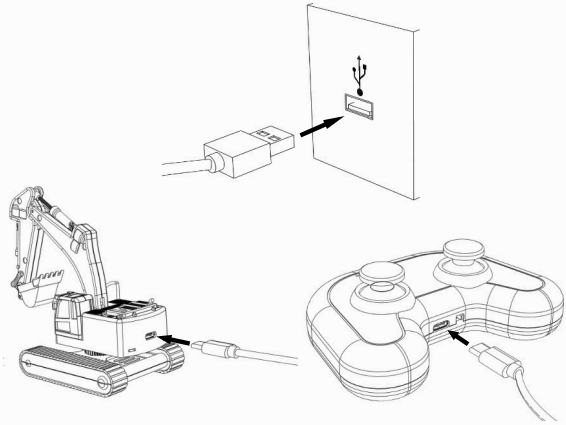
CHARGING THE NANO X100

Only use the provided USB charger to charge the battery.

1. Plug the charging cable into a compatible USB power source. It is compatible with most 5V mobile power adapters or smartphone chargers that provide at least 1 amp of output.
2. Ensure that the X100 charging port is clear of any debris.
3. Connect the USB Type-C connector to the rear of the X100.
4. Charging a fully discharged battery will take around 60 minutes.
5. When charging, an orange light will be visible through the rear of the X100. This light indicates that the unit is charging.
6. When charging is complete, this LED will turn off.
7. After charging, remove the USB cable from the X100 and the power source.
8. In the spare parts bag, a removable rubber dust plug can be inserted to keep debris out during use.

NOTICE: Using a USB power port with less than 1 amp of output to charge the battery may generate heat.

CAUTION: Disconnect the vehicle immediately after charging is complete. Never leave the vehicle connected to the charger.

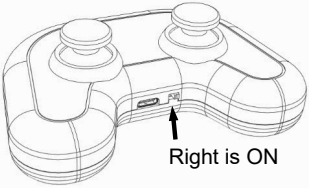


POWERING ON THE X100 AND TRANSMITTER

Transmitter

The power switch is located on the front of the controller.

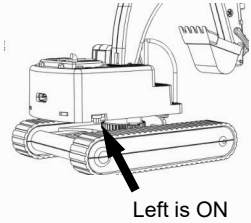
- Right is ON
- Left is OFF



NANO X100

The power switch is located on right ride of the NANO X100.

- Left is ON
- Right is OFF



TRANSMITTER FUNCTIONS

First Time Operators Video Guide

Scan the QR Code to the right for a follow along guide on transmitter function and first time operation.

Joystick Button Functions

Bluetooth Pairing

To put the transmitter in pairing mode, push in and hold both joystick buttons for 5 seconds.

(See Bluetooth Pairing page for detailed pairing instructions.)

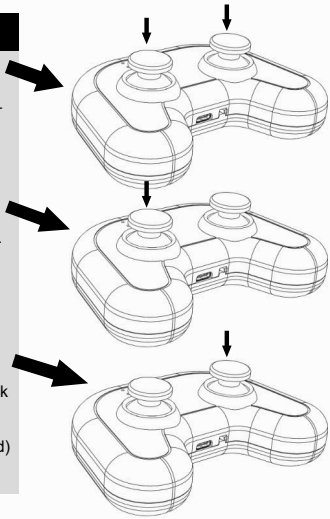
Switch Control Scheme

By default, the X100 enters ISO controls. To switch controls schemes, press and hold the left joystick button in for 3 seconds.

Change Control Modes

By default, the X100 enters "digging mode". This mode controls the bucket, dipper, boom, and swing functions. "Track mode" operates the tracks, swing, and boom functions.

Use the right joystick button (push inward) to switch between the two modes.



LED STATUS LIGHTS

RED (Top)

This light indicates that the transmitter is powered on.

- Solid RED: Powered On
- Blinking RED: Low Battery

BLUE (Middle)

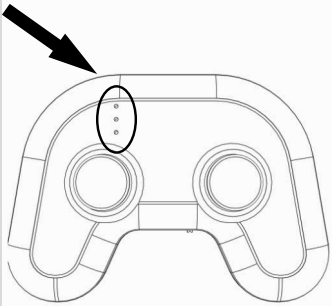
This light indicates Bluetooth connectivity.

- Solid BLUE: Connected
- No Light: Disconnected
- Blinking: Pairing

GREEN (Bottom)

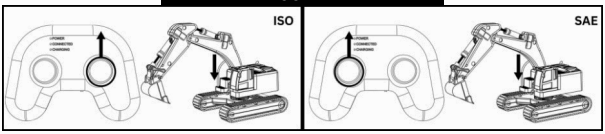
This light is for charging status.

- Blinking: Charging
- Solid: Fully Charged

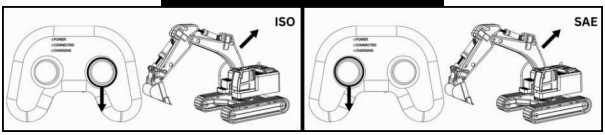


MODE 1

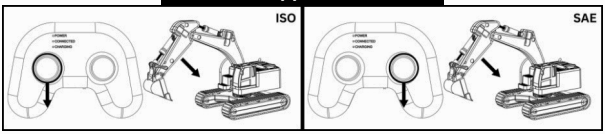
Boom In



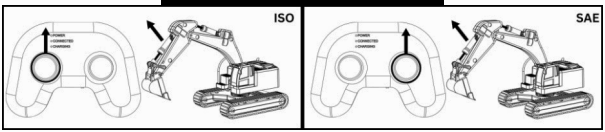
Boom Out



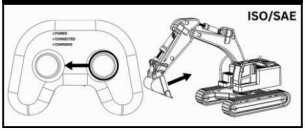
Dipper In



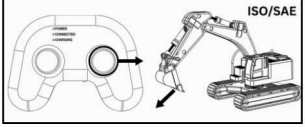
Dipper Out



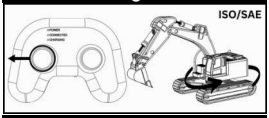
Bucket In



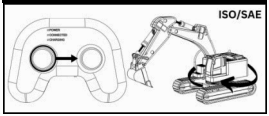
Bucket Out



Swing Left



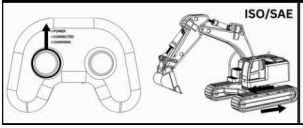
Swing Right



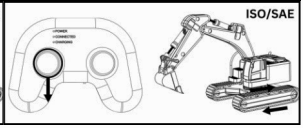
MODE 2

Left Track

Forward

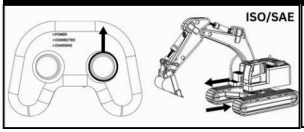


Backward

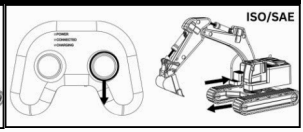


Right Track

Forward

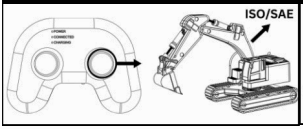


Backward

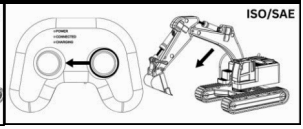


Boom

Out

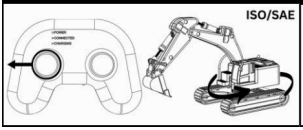


In

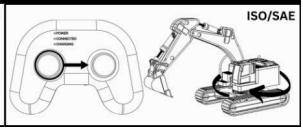


Swing

Left



Right



Bluetooth Pairing

The NANO X100 uses Bluetooth connectivity. The devices come paired from the factory but if the devices disconnect, follow the steps below to pair the X100 and transmitter.

1. Ensure that no other X100s or transmitters are currently pairing.
2. First power on the receiver (X100) and wait 15 seconds. (The X100 will automatically enter pairing mode if it has not established a connection within 15 seconds.)
3. Power on the transmitter.
4. With the transmitter powered, press in and hold both joystick buttons for 5 seconds. The blue LED will begin to flash.
5. The transmitter will search for a compatible NANO X100.
6. If the transmitter finds an X100 in pairing mode, they will connect and the blue led will turn solid.

Troubleshooting Pairing Issues

If the NANO X100 and transmitter fail to pair, consider the following potential issues:

- **Interference from Other Devices:** Bluetooth signals can be disrupted by other wireless devices in the area. Try moving to a location with fewer electronic devices or Wi-Fi networks.
- **Too Many Active Devices:** Ensure no other NANO X100s or transmitters are in pairing mode nearby, as multiple active devices can interfere with the connection.
- **Obstructions and Distance:** Keep the transmitter and X100 within a few feet of each other during pairing. Walls, furniture, or other obstacles can weaken the signal.
- **Low Battery Levels:** If either the transmitter or X100 has a low battery, pairing may be inconsistent. Ensure both devices are fully charged.
- **Previous Pairing Conflicts:** If the transmitter was previously paired with a different X100, try resetting the connection by turning both devices off and repeating the pairing process.
- **Environmental Factors:** High-interference environments, such as areas with heavy wireless traffic or industrial equipment, may affect pairing. Moving to a different location can help.

If issues persist, power cycle both the X100 and transmitter and retry the pairing process.

Operating the NANO X100

NOTICE: The NANO X100 is neither waterproof nor water-resistant. Avoid exposure to moisture at all times.

To get the best performance from your NANO X100, keep in mind that its small size is optimized for controlled, scaled-down environments with suitable digging materials. Here are some tips to ensure smooth operation:

- **Maintain Sufficient Battery Power:** For optimal performance, always operate the NANO X100 with at least 50% battery capacity. Low battery levels can reduce responsiveness and power.
- **Use Recommended Digging Materials:** Stick to non-abrasive materials like NANO EARTH (granulated cork) to prevent excessive wear on moving parts.
- **Keep Moving Parts Clean:** The X100 relies on intricate gear mechanisms. Regularly check and clear gears, actuators, and linkages of debris to prevent damage and premature wear.
- **Pay Attention to Sounds & Movement:** If you hear unusual clicking or notice abnormal movements, stop and inspect the X100. Clicking often indicates gears are skipping due to debris buildup in a mechanical linkage.
- **Easily Replaceable Parts:** If a component breaks, replacement parts are available at nanorc.com.

And most importantly—have fun! (And remember, efficiency is overrated!)

Helpful Links

Controlling the NANO X100

Scan the QR Code to the right to see the video library series about how to control the NANO X100.

www.nanorc.com

Bluetooth Pairing and Device Connection

Scan the QR Code to the right to see guides on how to pair your devices, and general connection tips, tricks, and troubleshooting to ensure your devices connect, and stay connected.

www.nanorc.com

Parts Lists and Exploded Diagrams

Scan the QR Code to the right to view the online parts lists and exploded diagrams to maintain and repair your NANO X100.

www.nanorc.com

Safety and Compliance Documentation

Scan the QR Code to the right to view the online portfolio of safety and compliance documents.

www.nanorc.com

Feedback and Suggestions for NANO NATION RC

Scan the QR Code to the right to visit the online form. This is the place to submit feedback and suggestions for the NANO RC team on how we can make our products better. Your feedback and suggestions are extremely important and valuable!

www.nanorc.com

Thank you for supporting our small business!

Welcome to NANO NATION!

FCC Statement for Excavator

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference receiv ed,including interference that may cause undesired operation.

Caution: Changes or modifications not expressly approved by the party responsible for Compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, p ursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against h armful interference in a residential installation. This equipment generates uses and can radiate radio freq uency energy and, if not installed and used in accordance with the instructions, may cause harmful interfe rence to radio communications. However, there is no guarantee that interference will not occur in a partic ular installation. If this equipment does cause harmful interference to radio or television reception, which c an be determined by turning the equipment off and on, the user is encouraged to try to correct the interfer ence by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help important announcement .

Radiation Exposure Statement

To comply with FCC RF exposure compliance requirements, this grant is applicable to only mobile configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Statement for remote

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.