



SoftBank NAO Humanoid and Programmable Robot User Guide

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SoftBank NAO Humanoid and Programmable Robot



Product Information

Specifications

- Microphone
- Camera
- Speaker
- Ethernet port
- USB port
- Battery Charger
- Tactile Sensors
- Eye and Ear LEDs
- Sonars
- Bumpers
- Foot LEDs

Accessories

- Ethernet Cable
- Battery Charger User Manual

Handling

Holding NAO by the waist is the best way to handle the robot and avoid pinching. It is easier to handle NAO when motors are OFF.

Be careful when picking up NAO: do not place your hands and fingers near the joints or between the limbs as you could be pinched. Do not pull NAO by the head, the arms, or the legs, otherwise you might damage the joints.

NAO's fingers are fragile, do not pull on them, they might come off.

Location

NAO is designed for indoor use only. Do not operate NAO if non-condensed humidity is above 80%. Keep NAO away from radiators, open flames, and heat sources. Do not expose NAO to dust, sand, moisture, or excessive saline atmosphere (e.g. coastal environment).

Battery

Charging Time: A fully charged battery can last from 45 minutes to 2 hours depending on use.

Follow the recommendations: otherwise the battery may become unusable. More information can be found in the Battery Charger Guide.

ON/OFF

Turning ON: Press the power button once and wait for approximately 2 minutes. Before powering on the robot, put it in the crouch position.

Turning OFF: Hold the power button for 3 seconds and wait for approximately 1 minute. For forced turn off, hold the power button for 8 seconds. Be careful, hold the robot as it will disengage its motors. When using this method, you might lose your data.

Motors ON: Press the power button twice for the standing posture.

Motors OFF: Press the power button twice for the crouching posture or sitting posture.

Precautions

Cleaning: Make sure NAO is turned OFF and unplugged. Use a soft dry cloth or cleaning wipes. Do not oil the joints. NAO is not a doll. Do not put any kind of clothing accessory on the robot. Do not block the sensors and joints. Do not use alcohol or ammonia-based products. Do not put makeup or paint on NAO. Do not use water. Do not get NAO wet and never handle the robot with wet hands. Never cover the head, particularly the air vent at the back of the robot's head.

Handcare:

1. When placing NAO in its box, ensure the hands are closed.
2. Ensure NAO's hands are lined up with the casing; otherwise, the top casing will not fit and you might break NAO's fingers.

FAQ

Q: Can NAO be used outdoors?

A: No, NAO is designed for indoor use only.

Q: Can NAO be exposed to high humidity?

A: No, do not operate NAO if non-condensed humidity is above 80%.

Q: Can NAO be placed near heat sources?

A: No, keep NAO away from radiators, open flames, and heat sources.

Q: Can NAO be cleaned with water?

A: No, do not use water to clean NAO. Use a soft dry cloth or cleaning wipes.

Q: Can NAO's fingers be pulled?

A: No, NAO's fingers are fragile. Do not pull on them as they might come off.

NAO Initial Setup:

www.softbankrobotics.com/support

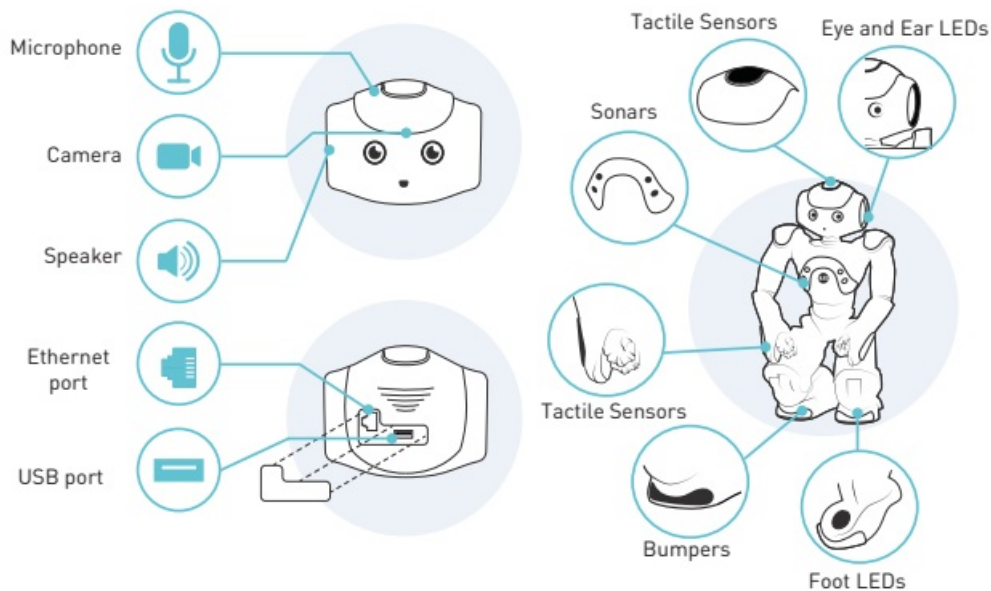
Please read this document carefully before using NAO™. We recommend that you store this document after reading for future reference.

For the latest version of this guide and for SoftBank Robotics Support go to:

www.softbankrobotics.com/support

Use of SoftBank Robotics robots is subject to SoftBank Robotics and third-party software license terms.

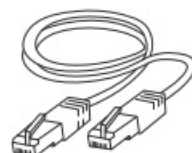
Overview



Accessories



Battery Charger



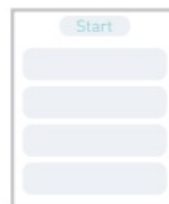
Ethernet Cable



Certification and technical information



This User Guide



Hello Guide (unboxing & setup)



Battery Charger User Manual

Handling

Holding NAO by the waist is the best way to handle the robot and avoid pinching. It is easier to handle NAO when motors are OFF.



Be careful when picking up NAO: do not place your hands and fingers near the joints or between the limbs as you could be pinched.

Do not pull NAO by the head, the arms, or the legs, otherwise you might damage the joints.

NAO's fingers are fragile, do not pull on them, they might come off.

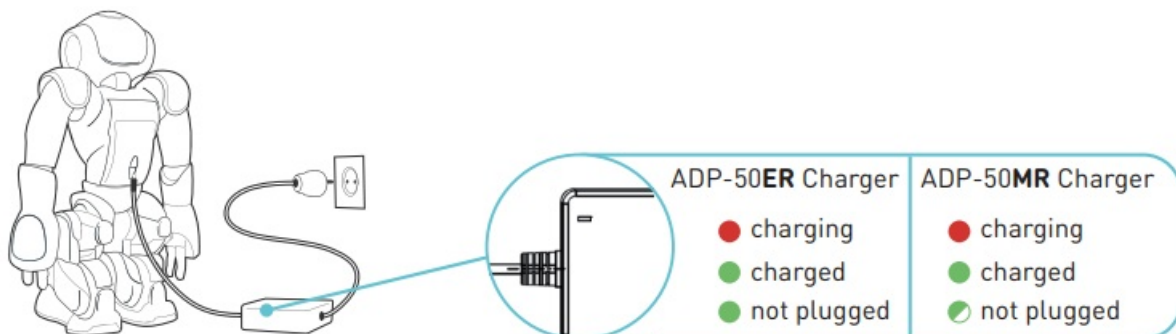
Location

- NAO is designed for indoor use only.
- Do not operate NAO if non-condensed humidity is above 80 %.
- Keep NAO away from radiators, open flames and heat sources.
- Do not expose NAO to dust, sand, moisture, or excessive saline atmosphere (e.g. coastal environment).

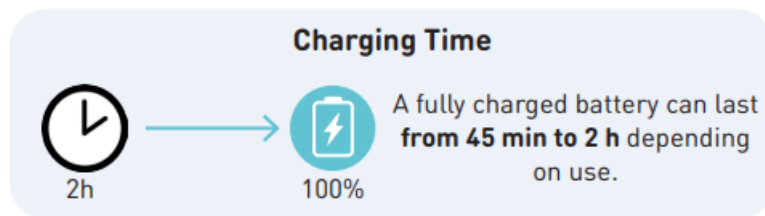
Battery

To optimize battery life:

- fully charge it before first use,
- fully charge it once a month, even during long time storage,
- fully charge it immediately after an automatic shut down.



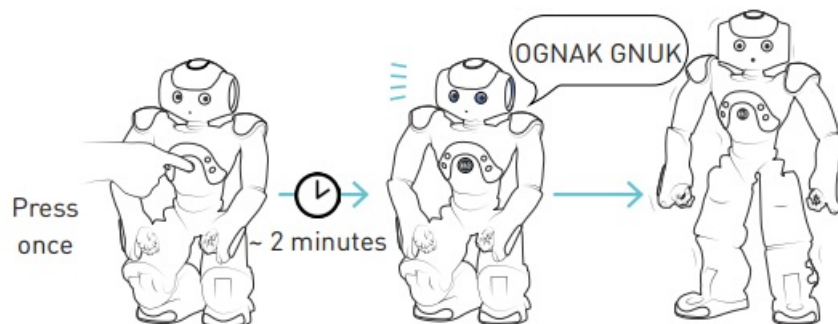
Charging Time



Follow the recommendations otherwise the battery may become unusable.
More informations in the Battery Charger Guide.

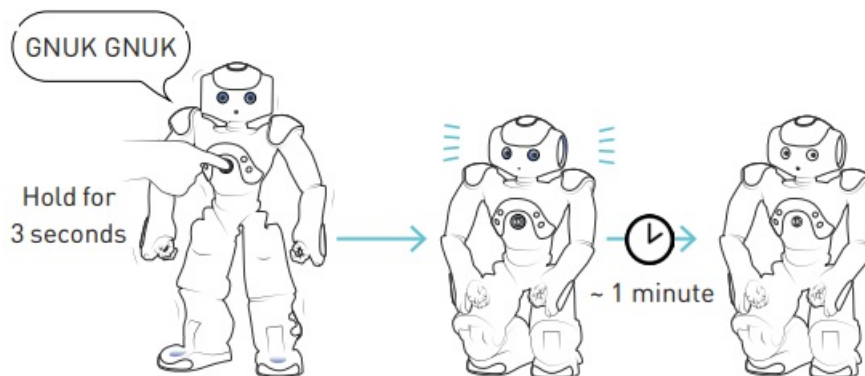
ON-OFF

Turning ON



Before powering on the robot, put it on crouch position

Turning OFF



Forced Turn OFF

Be careful, hold the robot as it will disengage its motors.
When using this method you might lose your data.

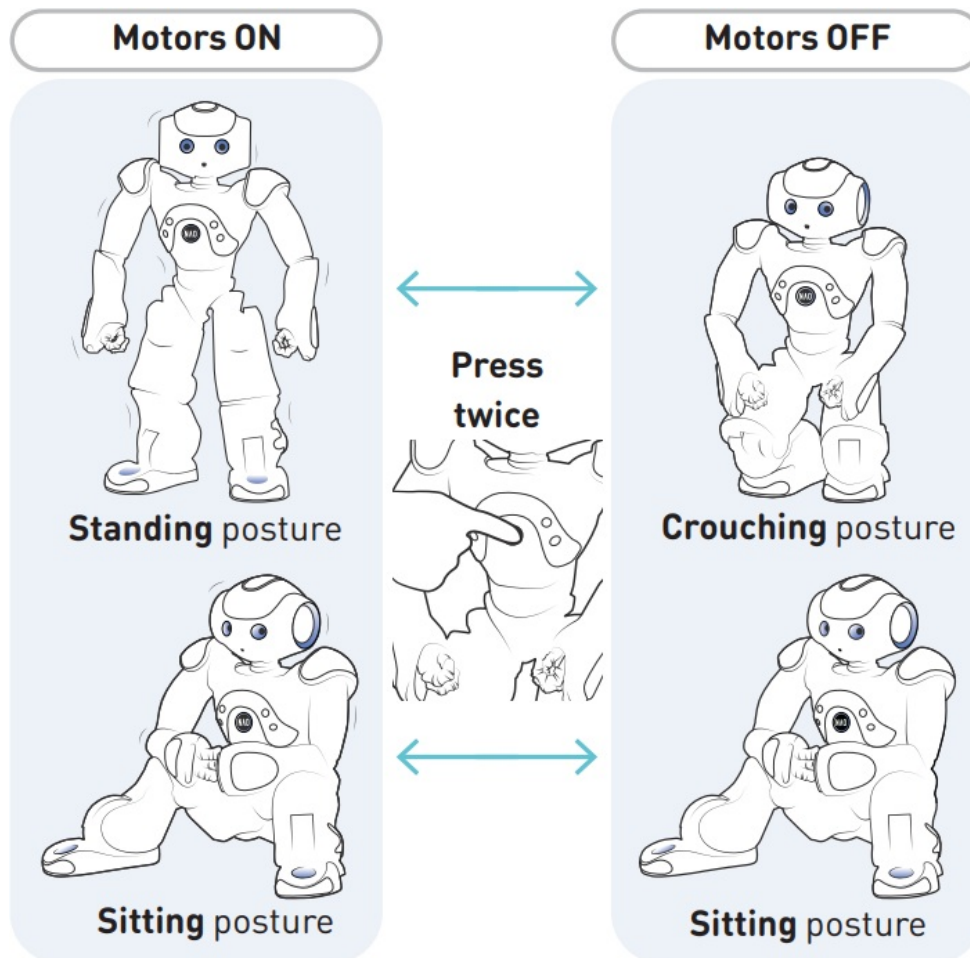


Motors

Disengage NAO's motors to:

- pick up NAO,
- change its posture,
- cool down the robot's motors.

Do not force on NAO's arms and legs or push against the motors because it will damage them.



Precautions

Cleaning

Make sure NAO is turned OFF and unplugged.

Use a soft dry cloth or cleaning wipes.

- Do not oil the joints.
- Do not use alcohol or ammonia-based products.
- Do not use water.
- Do not get NAO wet and never handle the robot with wet hands.

NAO is not a doll.

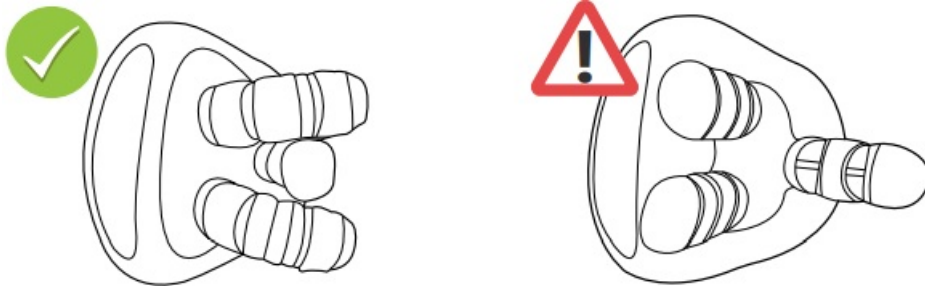
- Do not put any kind of clothing accessory on the robot.

- Do not block the sensors and joints.
- Do not put makeup or paint on NAO.

Never cover the head, in particular the air vent at the back of the robot's head.

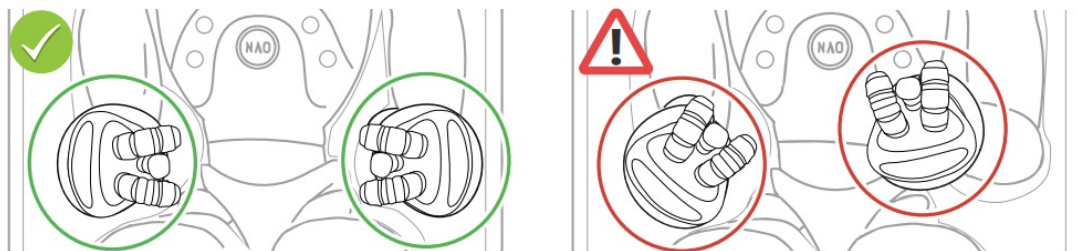
Handcare

1. When placing NAO in its box, ensure the hands are closed.



When NAO turns OFF, the robot automatically closes its hands.

2. Ensure NAO's hands are lined up with the casing otherwise the top casing will not fit and you might break NAO's fingers.

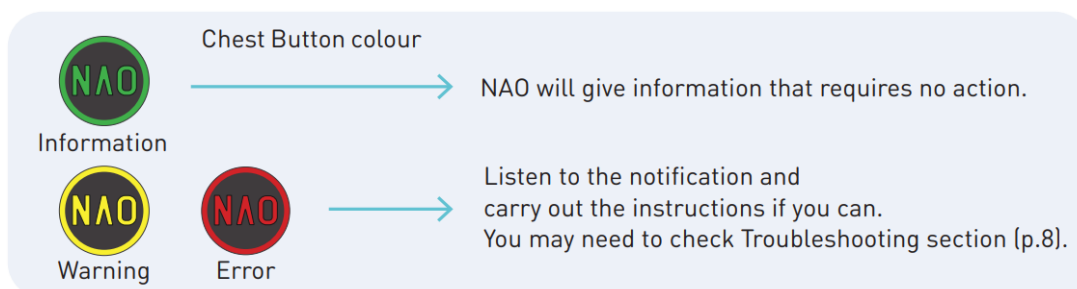


Notifications

There is a notification if the Chest Button blinks.

A notification is a combined Chest Button LED indication and a spoken message. Press the Chest Button once to hear the message.

Chest Button colour



Safety

IMPORTANT: It is strongly recommended that users follow these safety guidelines for their personal safety, not doing so may lead you to void the warranty of NAO or the battery charger.

General

- This User Guide and the accompanying certification leaflet are provided in the box with NAO. They have important and regulatory information.
- These documents must be kept with NAO during the entire robot's life.
- The guidelines will help you protect the robot, the battery charger and their working environment from damage. Always follow installation and service instructions closely.
- At all times remember that safety to human beings always comes first.
- The documentation also covers disposal and recycling information.
- These safety instructions do not cover all possible situations that may occur. When in doubt, contact SoftBank Robotics Support: www.softbankrobotics.com/support

Never attempt to service the robot yourself and/or its power supply (including disassembling and removing the casing). Spare parts are not sold.

Turn off NAO, unplug the battery charger and contact Support in any of the following cases:

- The power cord or the charger is worn.
- The charger has been damaged.
- There is mechanical damage to NAO.
- Liquid has gone inside NAO's casing.
- There is smoke or an unusual smell coming from NAO.
- NAO does not work properly.

Supervision

NAO is not intended for use by children, or by people with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.

- Children under 14 years old must be supervised by a person responsible for the child's safety and who has read and understood these instructions.
- Children 14 years old and over must be given instructions concerning the use of the robot in a safe way and understand the hazards involved.

In a public environment, the robot must not be within reach of children. Do not leave the robot with children, even when switched off. NAO is heavy. Keep packing material away from children.

Fire Hazard

NAO contains some electrical and internal units which can be hot during normal use. To avoid risk of fire, take the following precautions:

- The user is responsible for having an electrical installation that complies with local standards.
- Use only the power cord supplied by SoftBank Robotics with NAO. Do not use the battery charger and/or power cable if they show signs of damage or excessive wear.
Do not use the power cord with other products.

- Do not insert anything in NAO's casing.
- Take care not to spill any liquid on NAO. If in doubt, do not use. Make sure all components are thoroughly dry before using NAO again.
- Do not attempt to dry the robot with an external heat source such as a hair dryer or an oven.
- Do not use aerosol products that contain flammable gases around NAO.
Do not operate NAO in an explosive atmosphere.
- NAO's operating temperature must be between 5 °C and 35 °C (41 °F to 95 °F).
Do not use the battery charger if room temperature is above 40 °C (104 °F).

Mechanical Hazard

NAO has moving parts that could cause pinching and potentially serious injuries. Take the following precautions when working close to NAO:

- In normal situations, avoid carrying and touching the robot when it is moving, walking or getting up.
- Do not place your hands on any of the robot's joints.

Environmental Hazard

- NAO and its lithium battery have been designed, manufactured and quality-controlled according to international environmental regulations.
- Please do not dispose of your product in everyday waste.
- In order to protect human health and the environment, we recommend handing over your waste equipment to a designated collection point.
- For more information, please contact your waste disposal service.

Using NAO Near Medical Devices

IMPORTANT NOTICE FOR USE IN HEALTHCARE ENVIRONMENTS:

SoftBank Robotics products are not medical devices and are not listed under UL or IEC 60601 (or equivalent). Radio-frequency waves from electronic equipment can negatively affect the operation of other electronic equipment, causing them to malfunction.

The device is designed, tested, and manufactured to comply with regulations governing radio frequency transmission in countries such as the United States, Canada, the European Union, and Japan.

Therefore, please take the following precautions:

Pacemakers:

The Health Industry Manufacturers Association recommends keeping a minimum distance of 15 cm (6 inches) between wireless devices and pacemakers to avoid interference with the pacemaker.

Pacemaker users should therefore not carry the robot close to their chest.

If there is any reason to suspect interference, turn the robot off immediately.

Other Medical Devices:

Users of any other personal medical devices should consult the device manufacturer or physician to determine if there are other constraints.

Battery Charger and Battery

Please read The Battery Charger User Manual that comes with the battery charger. It contains important safety

instructions.

Use only the batteries designed for NAO and supplied by Softbank Robotics. The use of any other battery than those mentioned above may cause a risk of explosion.

Do not use the battery charger if exposed to rain, liquids, or excessive moisture.

Never disassemble Lithium-Ion batteries.

If the Lithium-Ion battery is damaged or leaking, contact SoftBank Robotics Support.

Button Cell

This product contains a button cell used to power the real-time clock and retain the product settings. It is designed to last as long as the product. Servicing or replacing the button cell should only be performed by a qualified service technician.

Troubleshooting

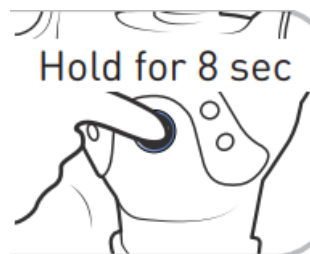
Contacting Support

If you have an issue with your robot, check the following points before contacting Support:

- Is the battery charged?
- Have you carried out the Initial Setup?
- Are there any notifications pending?
- Have you tried to turn NAO OFF (or perform a forced turn OFF) and turn it ON again?

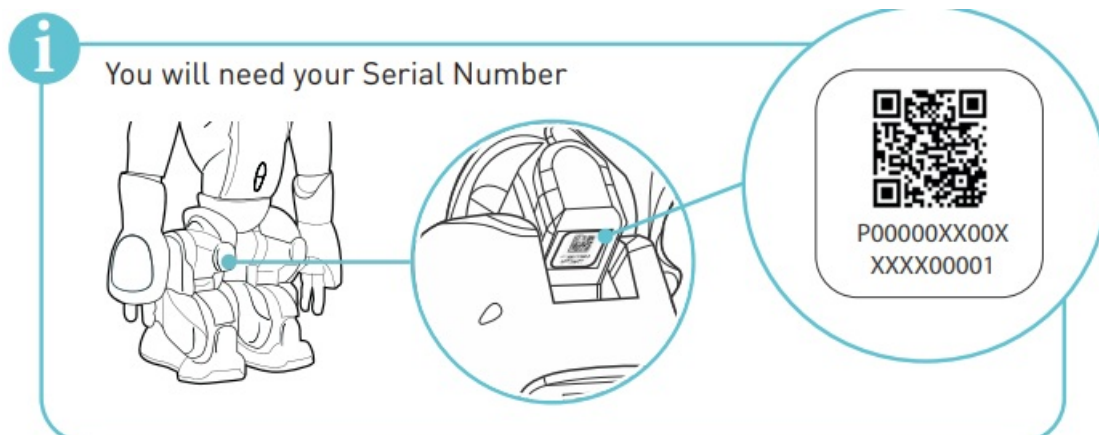
Forced Turn OFF

Be careful, hold the robot as it will disengage its motors. When using this method you might lose your data.



If NAO still doesn't work, contact SoftBank Robotics Support via the online form at:

www.softbankrobotics.com/support



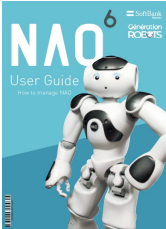
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Documents / Resources

	<p>SoftBank NAO Humanoid and Programmable Robot [pdf] User Guide NAO Humanoid and Programmable Robot, NAO, Humanoid and Programmable Robot, Programmable Robot, Robot</p>
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References

- [🤖 Robotic arm, mobile robot, autonomous robots, ROS robot](#)
- [User Manual](#)