



## Otto Ninja robot Arduino Nano design



Otto Robot

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## Summary

Early design of this open source robot that used an Arduino Nano with shield (not as the latest version)

[Hobby & Makers](#) > [RC & Robotics](#)

Tags: [toy](#) [robot](#) [arduino](#) [opensource](#) [ninja](#) [ottodiy](#)

### ⚠WARNING⚠

This previous design of Otto Ninja was published because the community requested. This design is old compared to the new [Otto Ninja Starter robot](#), **some functionalities might not work properly or it will be difficult to assemble, code or calibrate**, since it was an early prototype test, all these limitations lead to a more compact and balanced design in the new [Otto Ninja Humanoid](#).

**Arduino open source robot that can walk & roll.**

### Features

- **Walk & dance**
- **Transforms quickly into a wheeled robot**
- Simple Programming with [Otto Blockly](#) or Arduino

- ⚙ Metal high performance quality gear servos
- Expandable and modular
- Avoid obstacles with ultrasonic sensor
- Makes emotional sounds and melodies
- Button for interactions
- **Wireless communication - for remote control install the Bluetooth - Dabble - App**
- **Rechargeable battery & quick switch**

## Print instructions

Recommended using an FDM 3D printer.

No need of supports or rafts.

Resolution: 0.2 mm or less

Fill density 15%

## List of Parts

- Otto Nano Microcontroller
- Nano I/O shield board
- Micro USB cable Data Sync 1 m
- Battery 6F22 Rechargeable Lithium 9V 650mAh with micro USB port
- Switch + XH connector + Battery connector
- 2 x Ninja Servo 180° metal gears (it comes with 3 screws)
- 2 x Ninja Servo 360° continuous rotation metal gears (it comes with 3 screws)
- 2 x Oring 68 mm OD 60 mm ID 4 mm
- Ultrasonic sensor HC-SR04
- Button with headers
- 4pin Dupont cable with connector
- 2 x 3pin Dupont cable with connector
- Buzzer with headers
- Screwdriver Phillips 2.5X40mm (with magnetic tip)
- 4 x Metal self-tapping screw M2\*5 (they must be ferromagnetic)
- 3D printed parts in V1 or V2 folder

## Build your own robot like a Ninja

We invested lots of time and resources to provide open source code, software and hardware, please support this project by just **giving us a ❤ Like and share** and you are **welcome to be a part of this friendly community** of robot builders, teachers and makers. **Join today our Otto Builder community**

## This remix is based on



**Otto DIY build your own robot**

by Otto Robot

## Model files

**v2** 24 files

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**head-top-humanoid\_v2.stl**

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**head-bottom-humanoid\_v2.stl**

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**body-top-humanoid\_v2.stl**

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**body-topv2.stl**

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**body-middlev2.stl**

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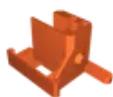
**plate-ultrasonicv2.stl**



**body-bottomv2.stl**



**legsv2.stl**



**anklemirrorv2.stl**



**anklev2.stl**



**footv2.stl**



**armv2.stl**



**armmirrorv2.stl**



**clip-legsv2.stl**



**clip-body-servov2.stl**



**clip-body-servomirrorv2.stl**

**clip-bodyv2.stl**



**clip-body-smallv2.stl**



**clip-headv2.stl**



**clip-buttonv2.stl**



**espada.stl**



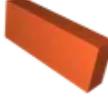
**hombro\_step-hombro.stl**



**pin\_espada.stl**



**pin\_brazo.stl**



**v1**

12 files

**body-topv1.stl**



**body-middlev1.stl**



**ultrasonicplatev1.stl**



**body-bottomv1.stl**



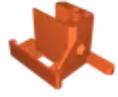
**legsv1.stl**



**anklev1.stl**



**anklemirrorv1.stl**



**footv1.stl**



**clip-legsv1.stl**



**clip-bodyv1.stl**



**clip-buttonv1.stl**



**support-push-switchv1.stl**



**ottoninjahumanoidarduino.step**



**ottoninjahumanoidarduino.f3d**



## Other files

**ninja-assembly-instructions.pdf**



**otto-ninja-wiring-connections.pdf**



**varspeedservo-master.zip**

Arduino Libraries

**dabble-master.zip**

Arduino Libraries

**otto\_ninja\_testcode.ino**

Arduino code for testing

**otto\_ninja\_2021\_test\_code.ino**

Arduino code for testing updated



### **otto\_ninja\_2021\_all\_functions\_code.ino**

all movements in one code

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### **otto\_ninja\_dabbleapp\_v1.ino**

Arduino code for Dabble Bluetooth App control

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### **otto\_ninja\_dabbleapp\_v2.ino**

Arduino code for Dabble Bluetooth App control

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