

# The Wipe-Eyeglasses

by **Victr** on May 25, 2015

## Intro: The Wipe-Eyeglasses

The Wipe-Eyeglasses is a new invention that wipes automatically your eyeglasses or your sunglasses.

Today, eyeglasses and sunglasses are very important in our life. Seeing well is a priority, so have clean glasses is necessary. Well, when we wipe our glasses, we mechanically use what we have at hand : a piece of t-shirt ora tissue and that's not really efficient. There is the solution : the Wipe-glasses : an engine that can wipe your eyeglasses or sunglasses efficiently. Moreover, it can be a new place for your eyeglasses so they will always be clean.

The Wipe-Glasses wipes both sides of your eyeglasses or sunglasses with a smart system composed by an Arduino Uno, servo motors and others electrical components and cotton.

Here is the steps to realise it with wood boards, 3D printing or cardboard.

Note : I am participating to the "3D printing contest". If you liked my Instructable, please support me by voting for it ! :D



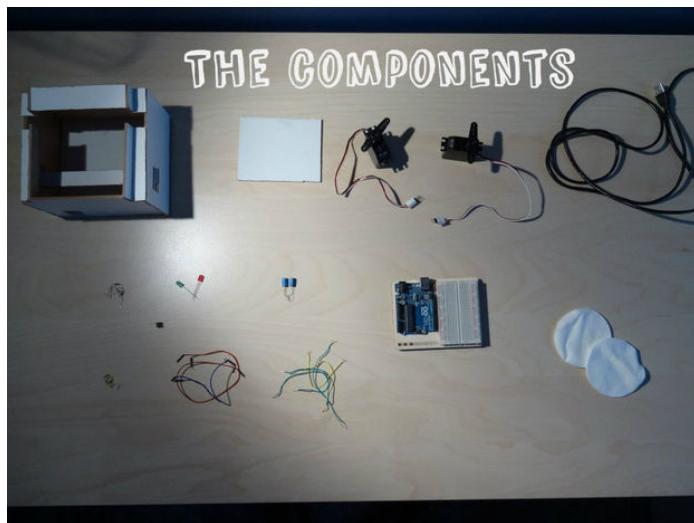
## Step 1: What you need to build it

Here is the list of the components you need to build the Wipe-Eyeglasses :

- Wood boards, cardboard or filaments to 3D print the structure
- Cotton
- An Arduino Uno
- A breadboard
- 2 servo motors
- Wires of different sizes
- 2 capacitors of 100 microF
- A pushbutton
- 1 red LED and 1 green LED
- 2 resistors of 220 ohms and 1 resistor of 10k ohms
- A USB-Arduino wire to power the circuit

And here the list of tools you will need, depending the way you choose to create the structure :

- A cutter, a wood saw, or a 3D printing machine
- Eventually a welder



## Step 2: The structure

First, you need to create the **structure** of the Wipe-Eyeglasses : you can either do it by cutting and gluing wood or cardboard, or by 3D print the parts that compose it.

Here are the **3D designs** of the structure which you need to recreate with the material of your choice and the **picture of the result with wood boards**.

However, these 3D models are designed for 3D printing so if you choose to build the Wipe-Eyeglasses with wood boards or cardboard (as I did it), you would need to adapt it. Click on "Edit 3D" and use the ruler to have the measurements : it will help you to cut your wood boards or cardboard in order to create the different parts that you will assemble after with glue. (For example, the "support\_servo" piece can be a simple 16x2 cm sized wood board).

You can also find here the .stl files of this designs if you want to 3D print it :

Note : To realize my invention, I have built the box with wood and I have only 3D printed the "rotor" design. It is easier and cheaper.



## File Downloads



[base.stl](#) (23 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'base.stl']



[couvercle.stl](#) (3 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'couvercle.stl']



[rotor.stl](#) (115 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'rotor.stl']



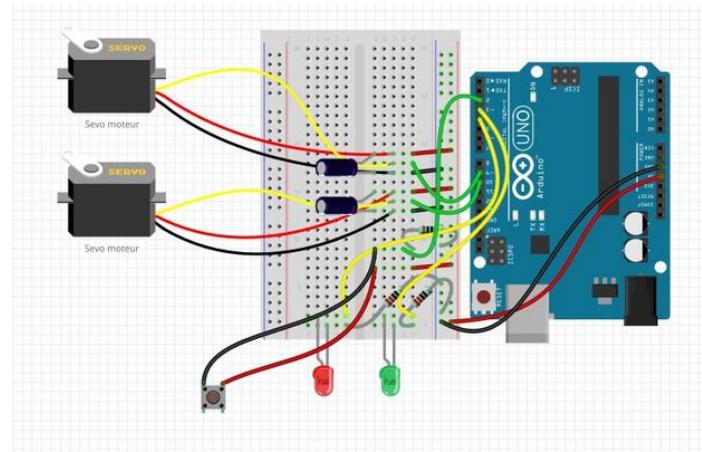
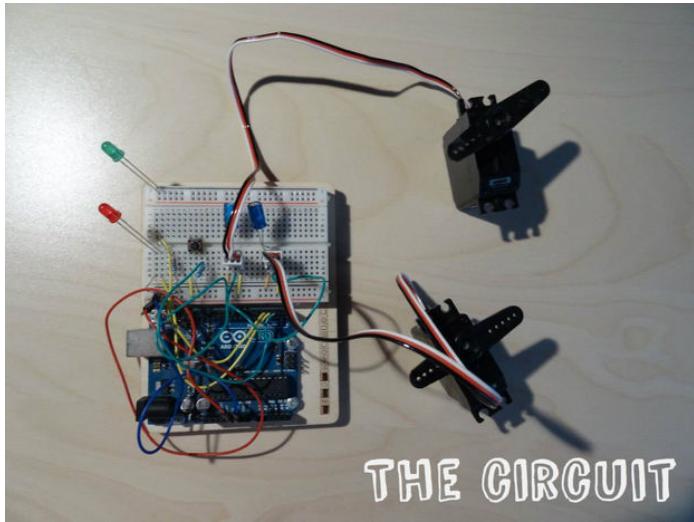
[support\\_servo.stl](#) (29 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'support\_servo.stl']

### Step 3: The circuit

The electric circuit of the Wipe-Eyeglasses is based on the Arduino. Here is what you need to reproduce it with the components.

Obviously, you can adapt it depending how you realize the structure.



### Step 4: The code

I used the **Arduino Software** to program the Wipe-Eyeglasses. Here is **the code**.

```
<p>#include <br>Servo Droite;
Servo Gauche;
const int switchPin = 2;
const int greenLed = 3;
const int redLed = 4;
int switchVal;
void setup() {
  Droite.attach(9);
  Gauche.attach(10);
  pinMode(greenLed, OUTPUT);
  pinMode(redLed, OUTPUT);
  pinMode(switchPin, INPUT);
}
void loop() {
  switchVal = digitalRead(switchPin);
  if(switchVal == LOW) {
    digitalWrite(greenLed, LOW);
    digitalWrite(redLed, LOW);
    Droite.write(90);
    Gauche.write(90);
  }
  if(switchVal == HIGH) {
    digitalWrite(redLed, HIGH);
    digitalWrite(greenLed, LOW);
    Droite.write(120);
    Gauche.write(120);
    delay(500);
    Droite.write(60);
    Gauche.write(60);
    delay(500);
    Droite.write(120);
    Gauche.write(120);
    delay(500);
    Droite.write(60);
    Gauche.write(60);
    delay(500);Droite.write(120);
    Gauche.write(120);
    delay(500);
    Droite.write(60);
    Gauche.write(60);
    delay(500);
    digitalWrite(redLed, LOW);
    digitalWrite(greenLed, HIGH);
  }
}</p>
```

If you want, you can change the angle of the servo or the number of times it change direction.

Note : I used servo motor with continue rotation and I needed to set the speed and the time, so you will need if you use basic servos to make some changes to the program.

```

#include <Servo.h>
Servo Droite;
Servo Gauche;
const int switchPin = 2;
const int greenLed = 3;
const int redLed = 4;
int switchVal;
void setup() {
    Droite.attach(9);
    Gauche.attach(10);
    pinMode(greenLed, OUTPUT);
    pinMode(redLed, OUTPUT);
    pinMode(switchPin, INPUT);
}
void loop() {
    switchVal = digitalRead(switchPin);
    if(switchVal == LOW) {
        digitalWrite(greenLed, LOW);
        digitalWrite(redLed, LOW);
        Droite.write(90);
        Gauche.write(90);
    }
    if(switchVal == HIGH) {
        digitalWrite(redLed, HIGH);
        digitalWrite(greenLed, LOW);
        Droite.write(120);
        Gauche.write(120);
        delay(500);
        Droite.write(60);
    }
}

```



## File Downloads

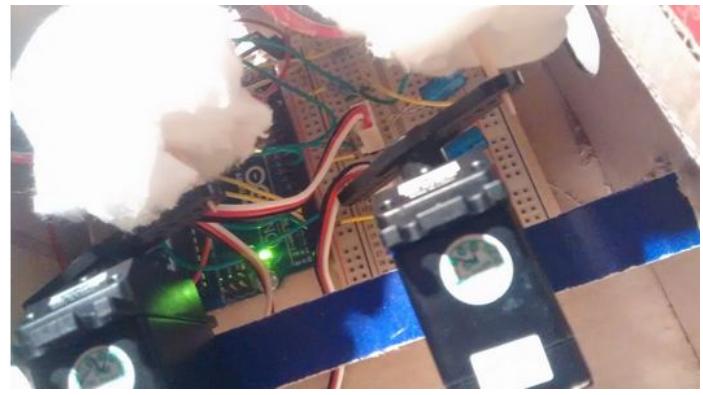
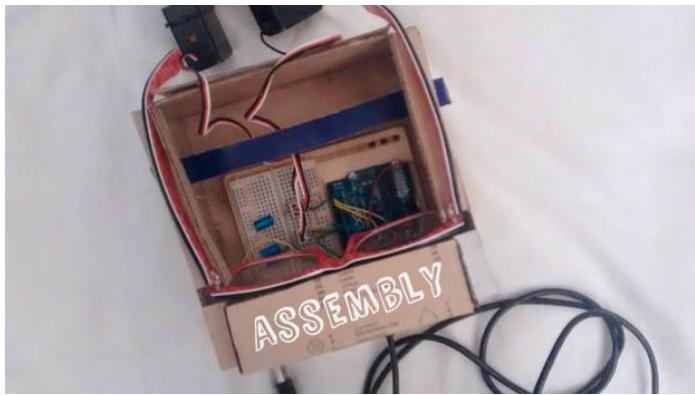


[WashGlasses.ino \(1 KB\)](#)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'WashGlasses.ino']

### Step 5: The assembly

This is the last step of the building. Put the Arduino Uno with its circuit inside the structure. Then, put the servos on the "support\_servo" part and join the "rotor" part to the servo with glue. Finally, put some cotton on the "rotor" piece. Here it is : you have built the Wipe-Eyeglasses !



## Step 6: How it works

The process is easy :

1. (Wet your eyeglasses or sunglasses with water or with a special optical spray)
2. Put your eyeglasses on the Wipe-Eyeglasses.
3. Press the button, it starts to work : cotton balls go 30° to the left and then 30° to the right. The red LED is on.
4. The Wipe-Eyeglasses stops to work, the red LED turns off.
5. Your eyeglasses are clean :)

If you have any question, please contact me ! Thanks for reading.

## HOW IT WORKS

