

NEAR TAG QUALITY

GRAFFITI PRINTER

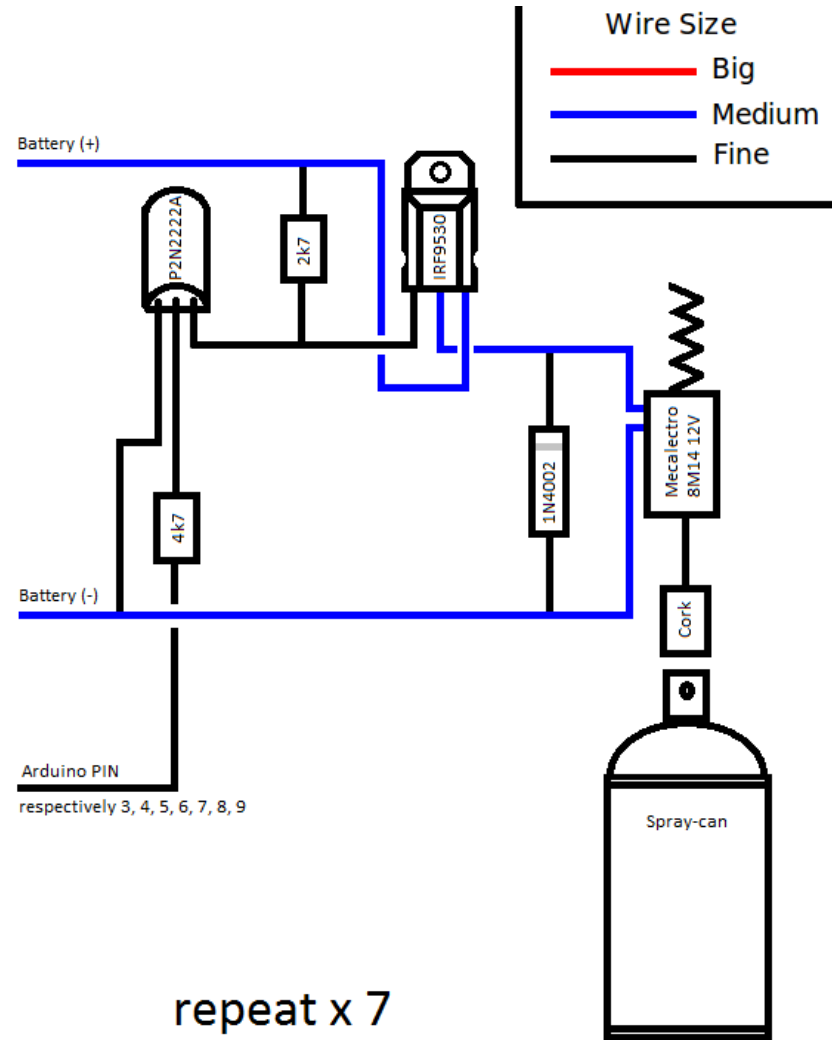
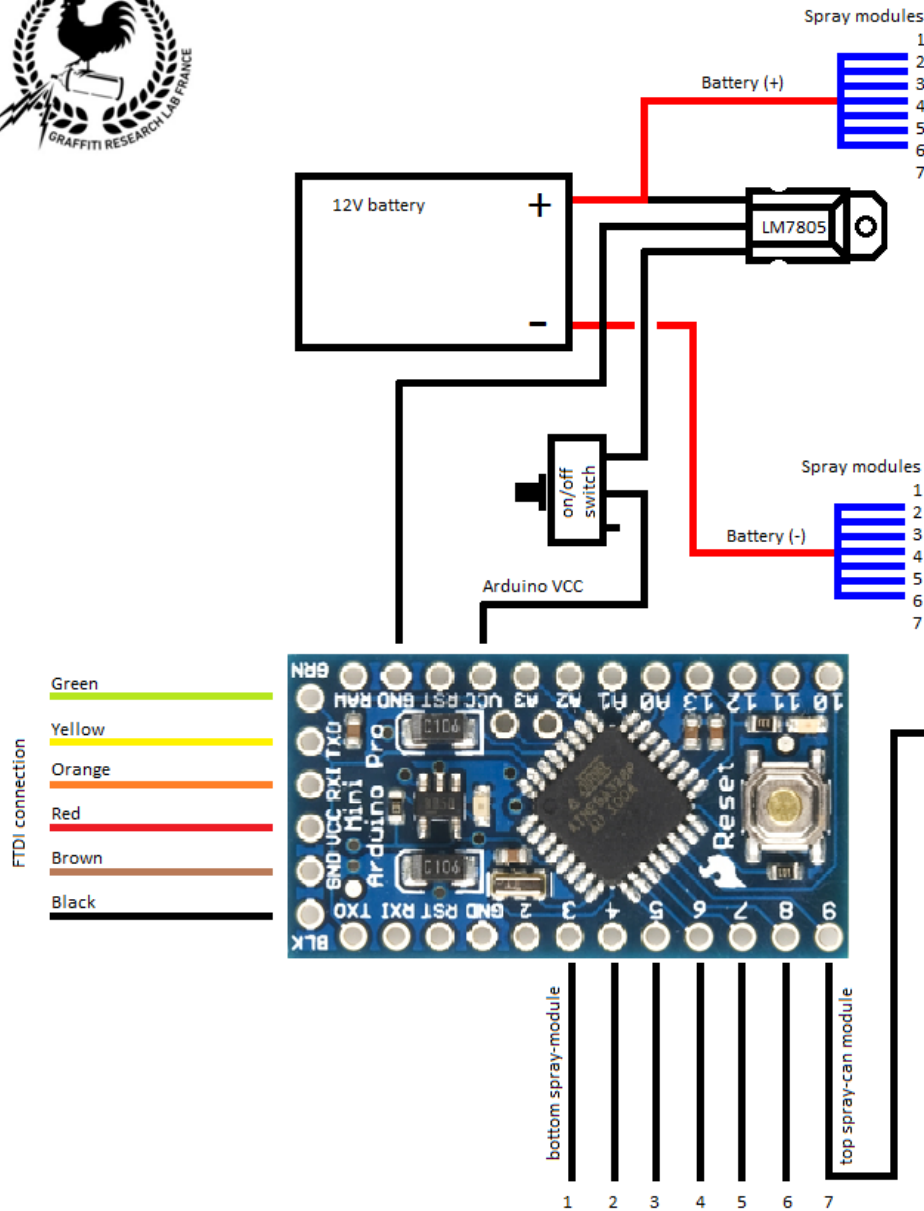


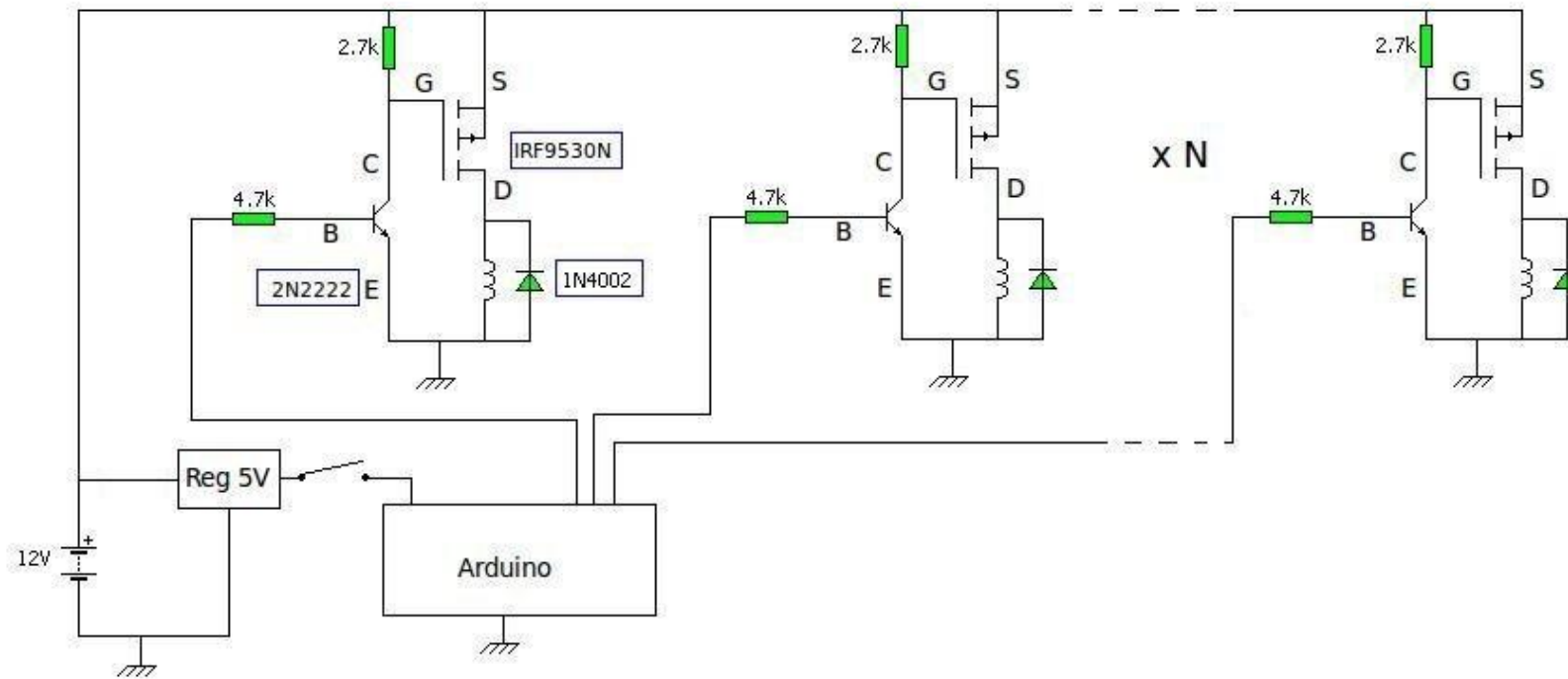
<http://graffitiresearchlab.fr>

HOW TO BUILD YOURS

PARTS LIST

Part	Ref	Link	Qty	Approx price
Spray can modules				
Transistor Mosfet Canal P : IRF9530N	Radiospares 541-0828	http://radiospares-fr.rs-online.com/web/p/products/5410828	7	1.08€
NPN Bipolar Transistor : 2N2222A	Radiospares 544-9624	http://radiospares-fr.rs-online.com/web/p/products/5449624	7	0.12€
2k7 resistor	Radiospares 707-7704	http://radiospares-fr.rs-online.com/web/p/products/7077704	7	0.04€
4k7 resistor	Radiospares 707-7726	http://radiospares-fr.rs-online.com/web/p/products/7077726	7	0.04€
Solenoid valve Mecalectro : 8M14 12V	Radiospares 307-3534	http://radiospares-fr.rs-online.com/web/p/products/3073534	7	22.26€
Power rectifier diode : 1N4002-E3	Radiospares 628-8953	http://radiospares-fr.rs-online.com/web/p/products/6288953	7	0.36€
Springs	No ref	Test and find what works the best	7	
Wine corks	French fine wine	Won't work if from another country	4	1 500,00 €
Battery + controller module				
Linear voltage regulator : L7805ACV 5V 1A	Radiospares 298-8508	http://radiospares-fr.rs-online.com/web/p/products/2988508	1	0.78€
12V battery	Any	The smaller the better (scooter or moto ones)	1	
5V Arduino board (ie : Arduino Pro mini)	Sparkfun DEV-09218	http://www.sparkfun.com/products/9218	1	\$18.95
On-Off switch	Any		1	
FTDI cable (USB/TTL-232 converter)	Radiospares 429-307	http://radiospares-fr.rs-online.com/web/p/products/429307	1	17.45€
Structure				
40cm metal bar (easy to bend)			7	
Strong metal bar			1	
Straps			7	
Spray cans			7	
Screws			+++	
Tools				
Soldering iron, cutting pliers, pliers, screwdriver, wrench, file, corkscrew (to extract the wine corks)				
Wire (3 different sizes : large, middle, thin)				





The modules and the stand

Open the 4 bottles of wine, drink all content and keep the corks for later use (see photo).

Bend the bars as shown, make the holes for the electromagnet.

Make sure you have the right distance between the electromagnet and the spray can.

Put it as far as possible so the electromagnet gives the maximum power

It's better to place it too far then to close. Doing so, you can always add cardboard under the spray-can to adjust .

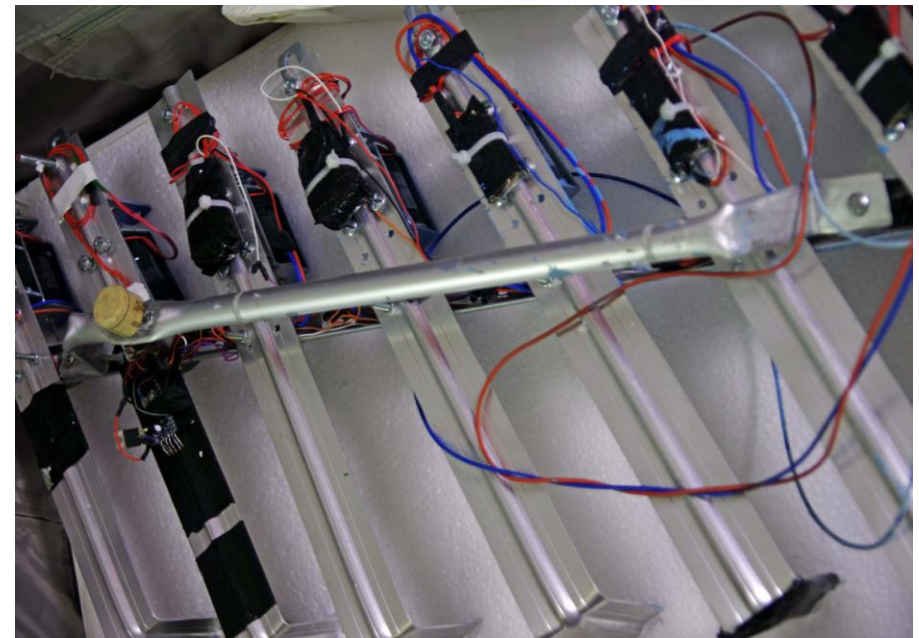
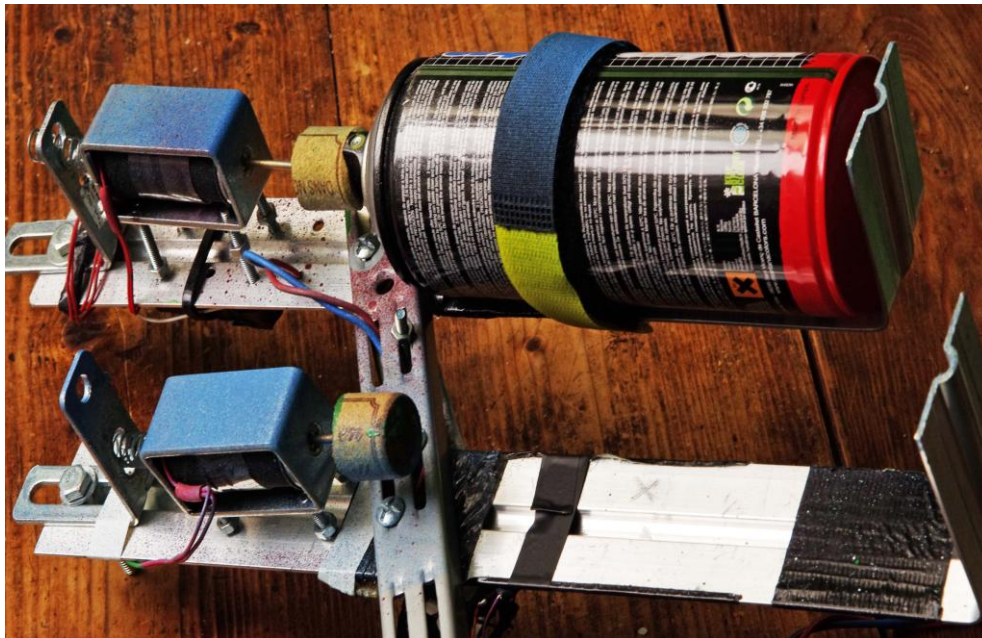
Make the holes to fix the bended bar on the bar holding them all.

Make the holes for corner plates on which you will attach the springs.

Assemble the modules on the bended bars.

Assemble the springs, with the corner plates.

You might have to drill them so the spring pushes on the right spot of the electromagnet.



Software part

Pre-requisites

Upload and install the Arduino application on your computer (<http://arduino.cc/en/Main/Software>)

Upload and install Python in case you don't have it yet (<http://www.python.org/getit/>)

Upload and unzip the NTQ softwares (http://graffitiresearchlab.fr/download/NTQ_Software_v1.0.zip)

The NTQ software contains 4 files : 3 Python scripts and 1 Data.txt file.

About the Python scripts: one is to write from left to right, another from right to left, and the third one from top to bottom.

Programming the NTQ

Launch the appropriate NTQ Python script.

A window with a textfield will appear.

Type your message and press OK.

It will automatically generate a file named "code.txt" (in the same directory as the .py scripts).

Open the "code.txt" file in a text editor and copy its content.

Plug the Arduino board to your computer and launch the Arduino application

Paste the content of the file generated previously (code.txt) to the Arduino window

Compile and upload it to the Arduino board.

Ready?

Turn on the NTQ, after a couple of seconds it should start triggering.

Tip

You can change the speed in the Arduino soft, by changing the value of x:

```
int ledPin1 = 9;
```

```
int ledPin2 = 8;
```

```
int ledPin3 = 7;
```

```
int ledPin4 = 6;
```

```
int ledPin5 = 5;
```

```
int ledPin6 = 4;
```

```
int ledPin7 = 3;
```

```
int x = 250;
```

Have fun!