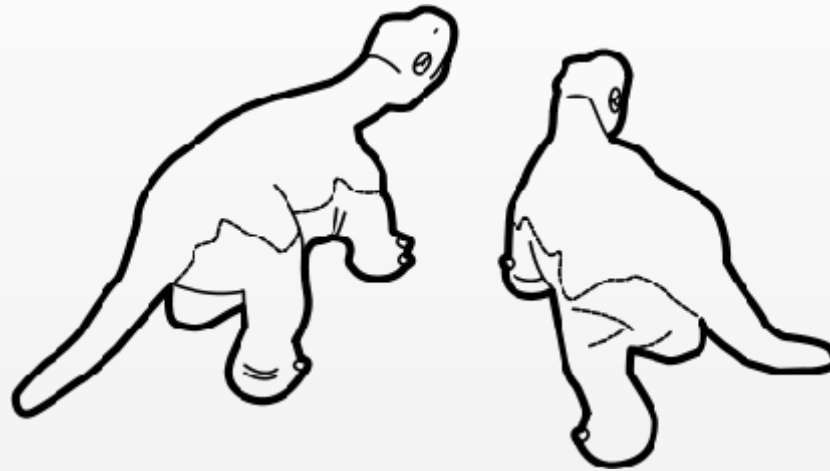


Robot Pleo

ali kako dinozavru zamenjati vrat



Tomaž Šolc
tomaz.solc@tablix.org

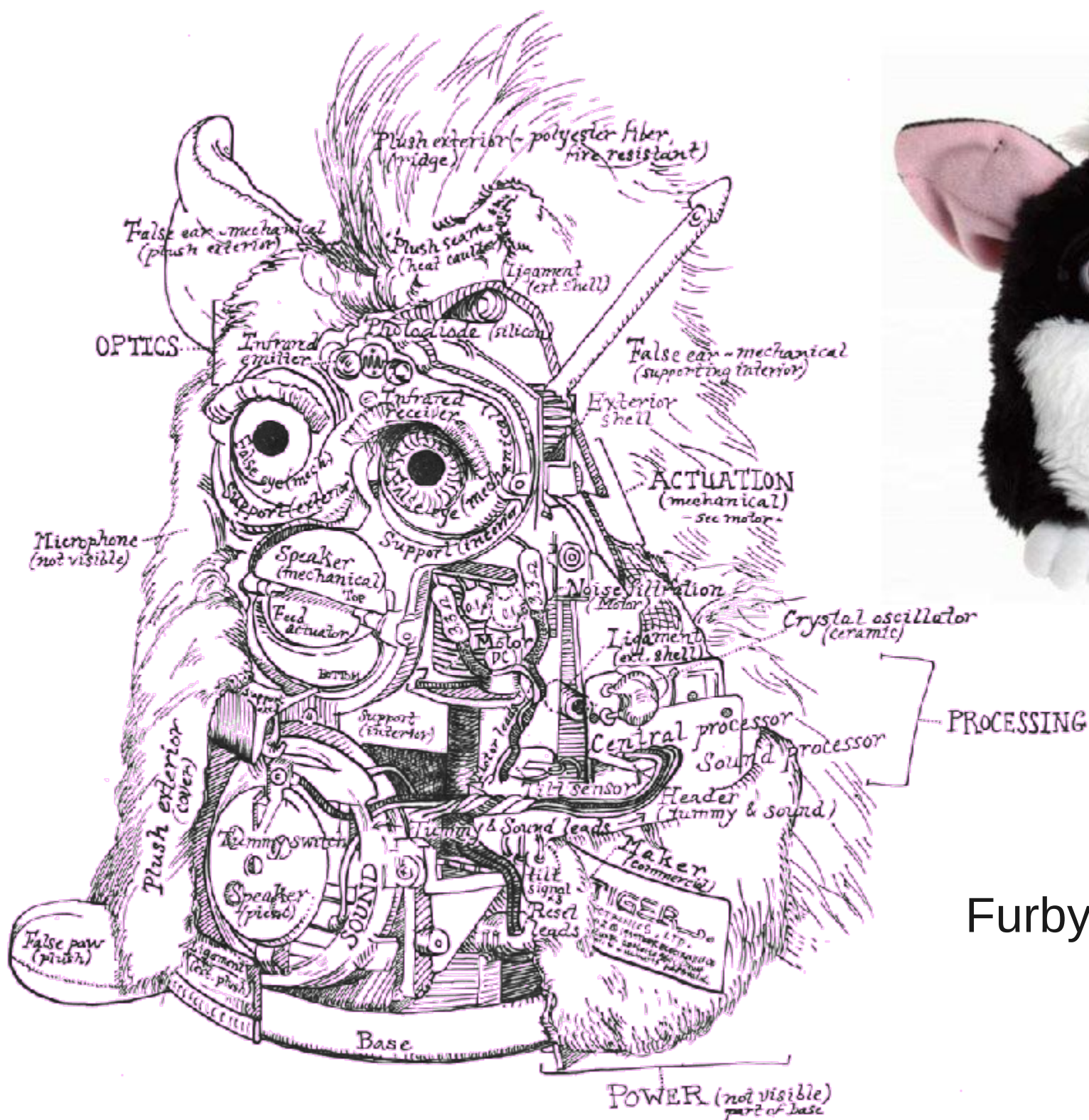
Pipini odprti termini, 17. marec 2009



Pleo od zunaj



Caleb Chung (Ugobe Co-founder/CEO)



Furby (1998)



THE 3 LAWS OF UGOBE LIFE FORMS

UGOBE Life Forms must:

1. Feel and convey emotions
2. Be aware of themselves and their environments
3. Learn and evolve over time

Life Stages

Pleo has three life stages, and his progress depends on your level of interaction. Listen for his first sounds, look for his first steps, watch how he adjusts to his world. As Pleo progresses through each stage, he exhibits a broader range of movement and behaviors.

The Three Pleo Life Stages

Stage 1 – Birth

Duration

First 5-10 min., approx (depending on level of active interaction)



What to Expect

Pleo opens his eyes to both you and the world for the first time. He starts to adapt to his environment. He is very slow, and his sensors are not very responsive yet. The more you pet and nurture Pleo in this stage the more confident he becomes and the faster he will develop. Pleo is finished “hatching” when he is fully awake and stands up on all four feet.

Stage 2 – Hatchling

Duration

30-45 min., approx (depending on level of active interaction)



What to Expect

Pleo starts to exhibit basic behaviors and needs. He begs to be fed, starts to walk, explores his environment, takes short naps like a baby, and starts to exhibit a wider range of emotions.

Stage 3 – Juvenile

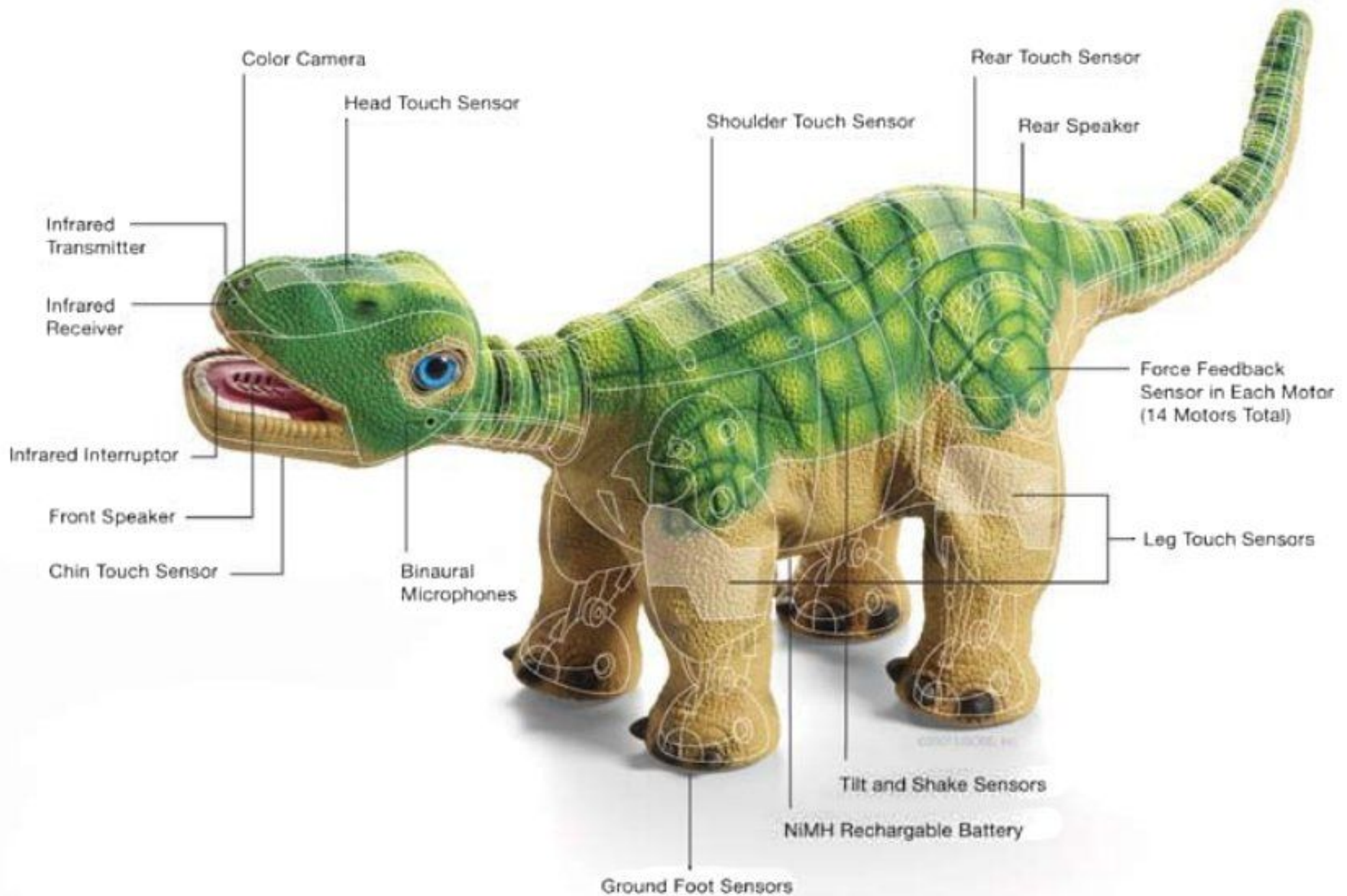
Duration

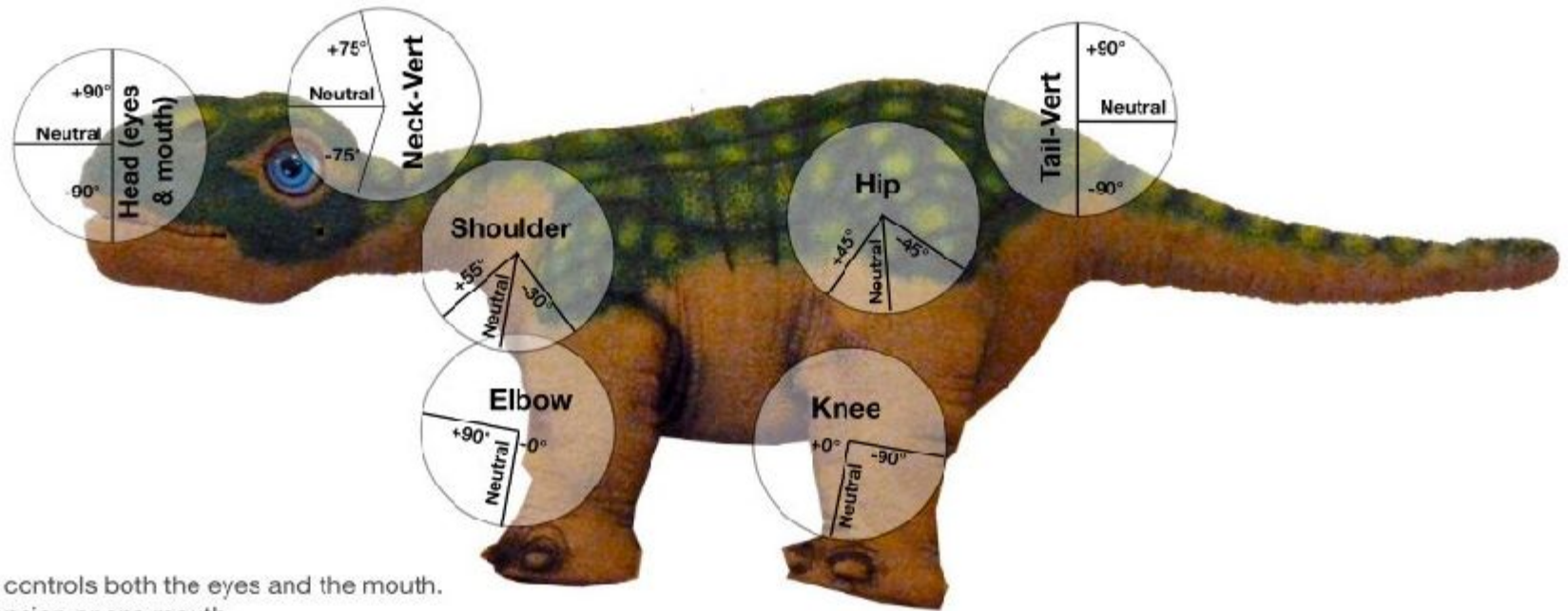
Indefinitely; the rest of his life



What to Expect

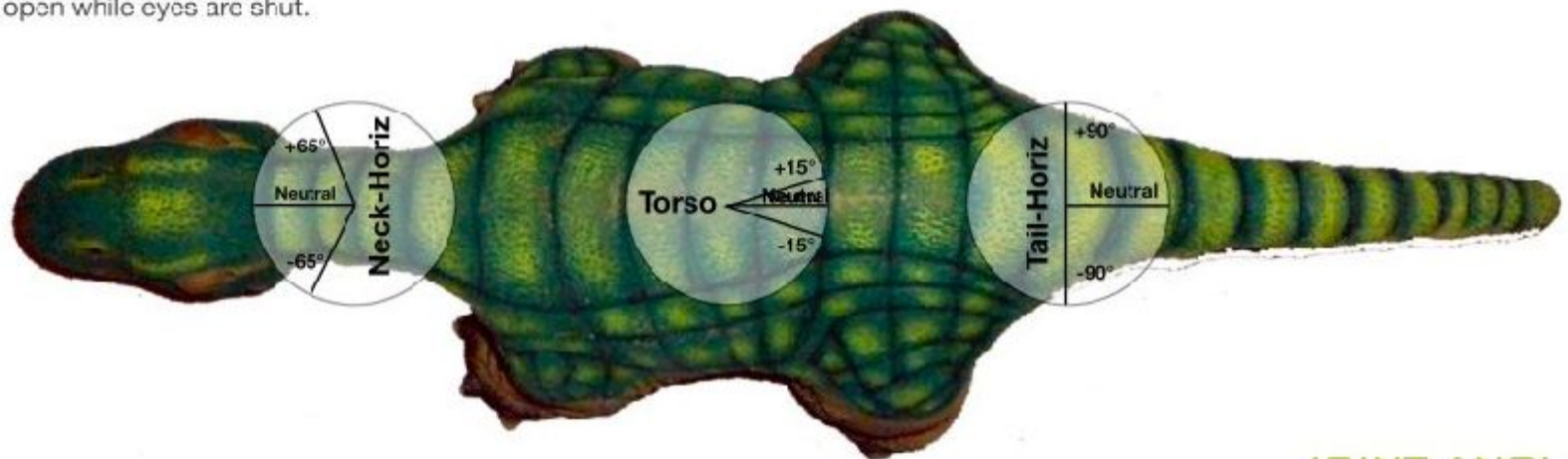
Pleo enters into his final stage of development. As he expands his capacity to learn, he exhibits a full range of movement and behaviors. He begins asserting a personality. You can't go wrong (aside from physically mistreating Pleo), so take your time to observe, play and learn about Pleo.





NOTE:

- Head motor controls both the eyes and the mouth.
- Full eye extension opens mouth.
- Mouth cannot be open while eyes are shut.



JOINT ANGLES

Version 1.0

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Hardware

- Atmel ARM7 32 bitni mikrokontroler
- NXP ARM7 (kamera, zvok)
- 4x majhni 8 bitni mikrokontrolerji za nadzor servomotorjev
- USB port
- SD card slot

Script (PM [in PAWN])

Sensor
Scripts

Drive
Scripts

Behavior
Scripts

Content (PM [Media])

Motions

Sounds

Motion/Sound
Commands

Mid Level (Life OS [in C])

Animation
System

Attention
System

Drive
System

Motor
System

Property
System

Script
System

Sensor
System

Sound
System

Low Level (Life OS [in C])

Motor
Control

Sound
Playback

Sensor System

Light
Level

Sound
Loudness

Sound
Direction

Touches

Power State
Battery Level
Motor Status
IR Send/Receive
Mouth IR

File I/O
(SD/DF)

Pleo Hardware

Main ARM7 (Atmel)

Motors
(Toshiba)

Touch
(Qprox)

Power/
Batt

USB/
Serial

Secondary ARM7 (NXP)

Camera
OV6650
(Omnivision camera)

Sound
Input

IR

Data
Flash

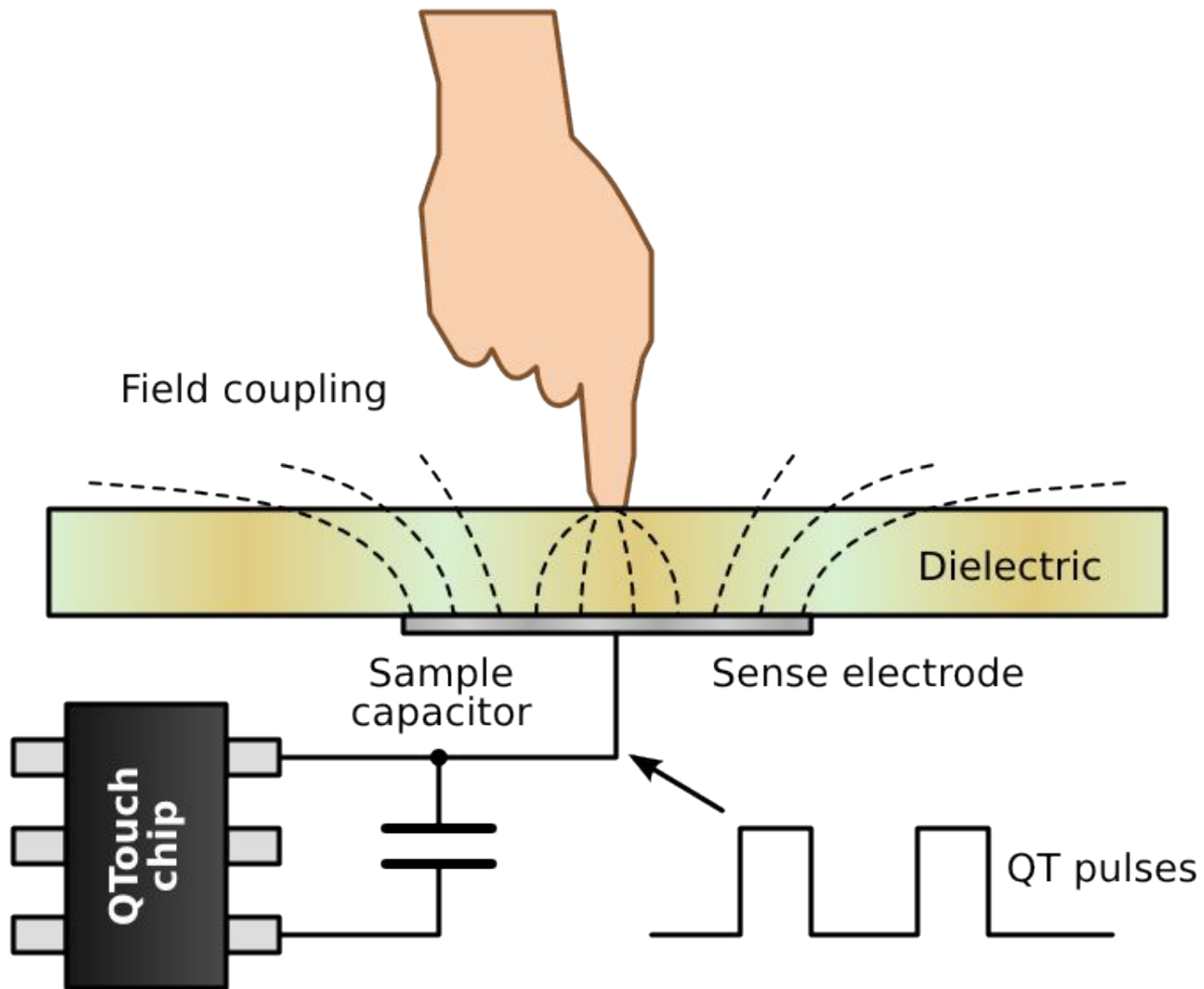
SD
Card

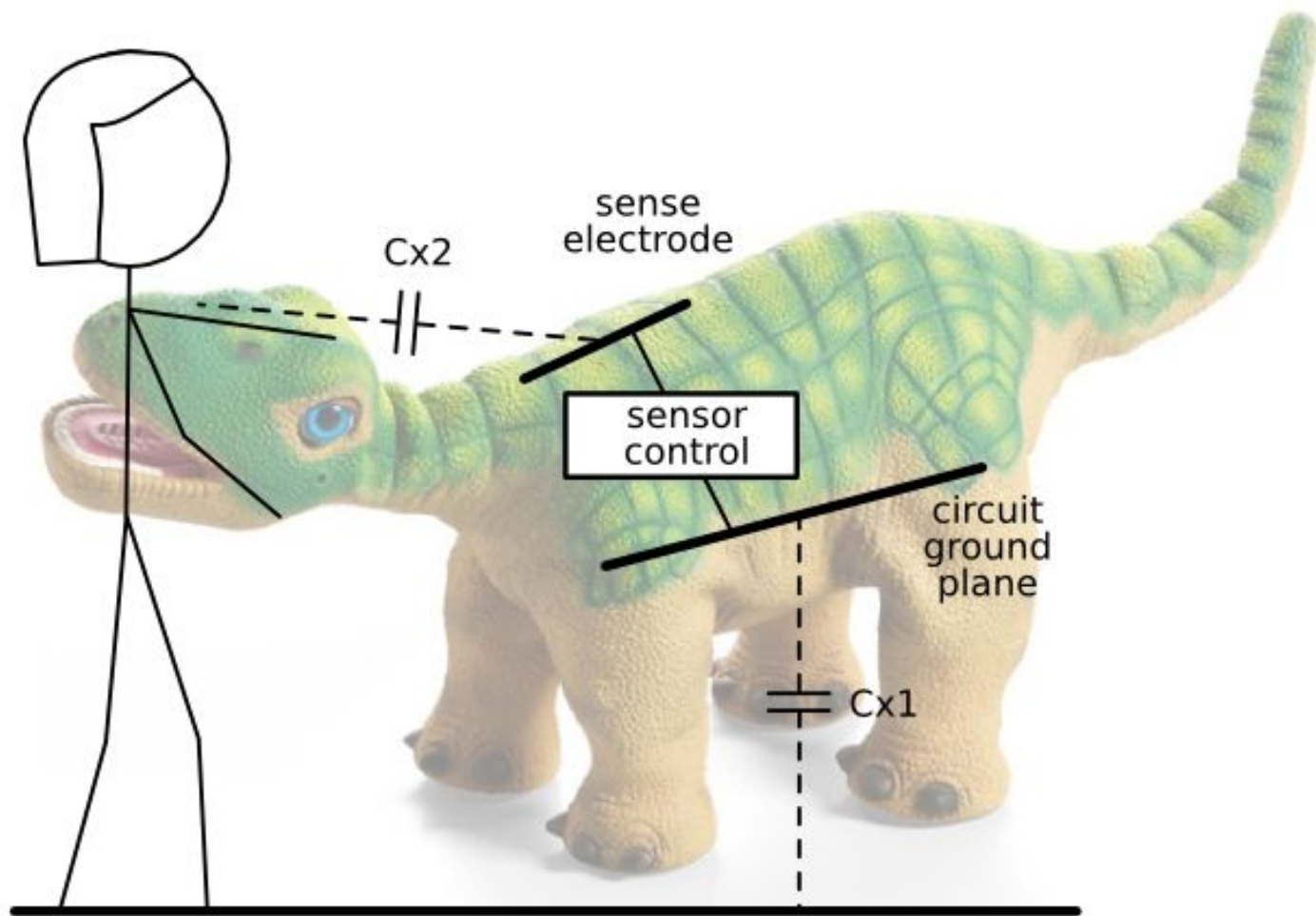
```
2 // Very simple sensors.p example. Add code to on_sensor for those
3 // sensors you would like to respond to.
4
5 //
6 // save space by packing all strings
7 #pragma pack 1
8
9 #include <Log.inc>
10 #include <Script.inc>
11 #include <Sensor.inc>
12
13
14 public init()
15 {
16     print("sensors:init() enter\n");
17
18     print("sensors:init() exit\n");
19 }
20
21 public on_sensor(time, sensor_name: sensor, value)
22 {
23     new name[32];
24     sensor_get_name(sensor, name);
25
26     printf("sensors:on_sensor(%d, %s, %d)\n", time, name, value);
27
28     switch (sensor)
29     {
30     }
31
32     // reset sensor trigger
33     return true;
34 }
35
36 public close()
37 {
38     print("sensors:close() enter\n");
39
40     print("sensors:close() exit\n");
41 }
```

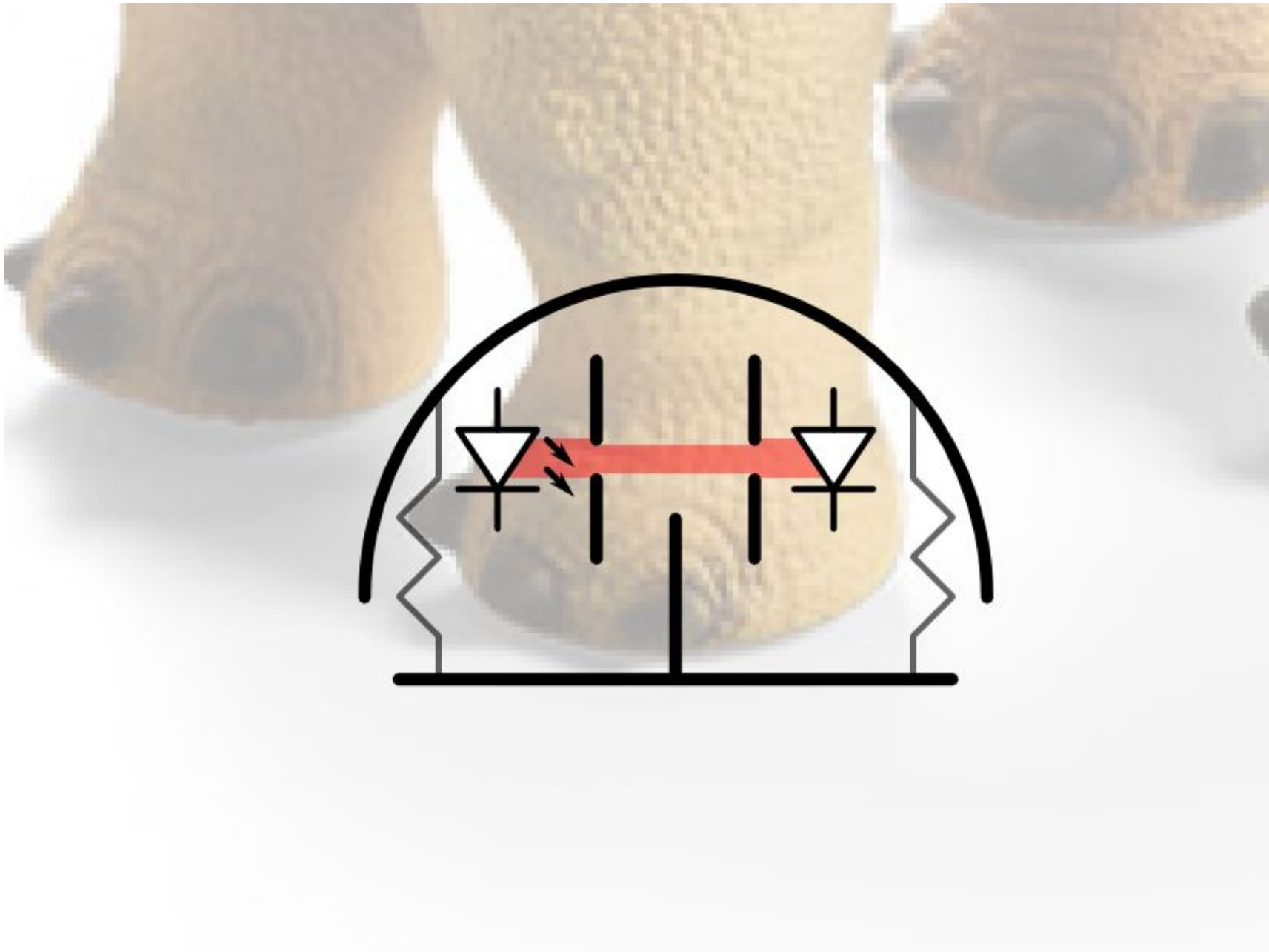

Pleo od znotraj



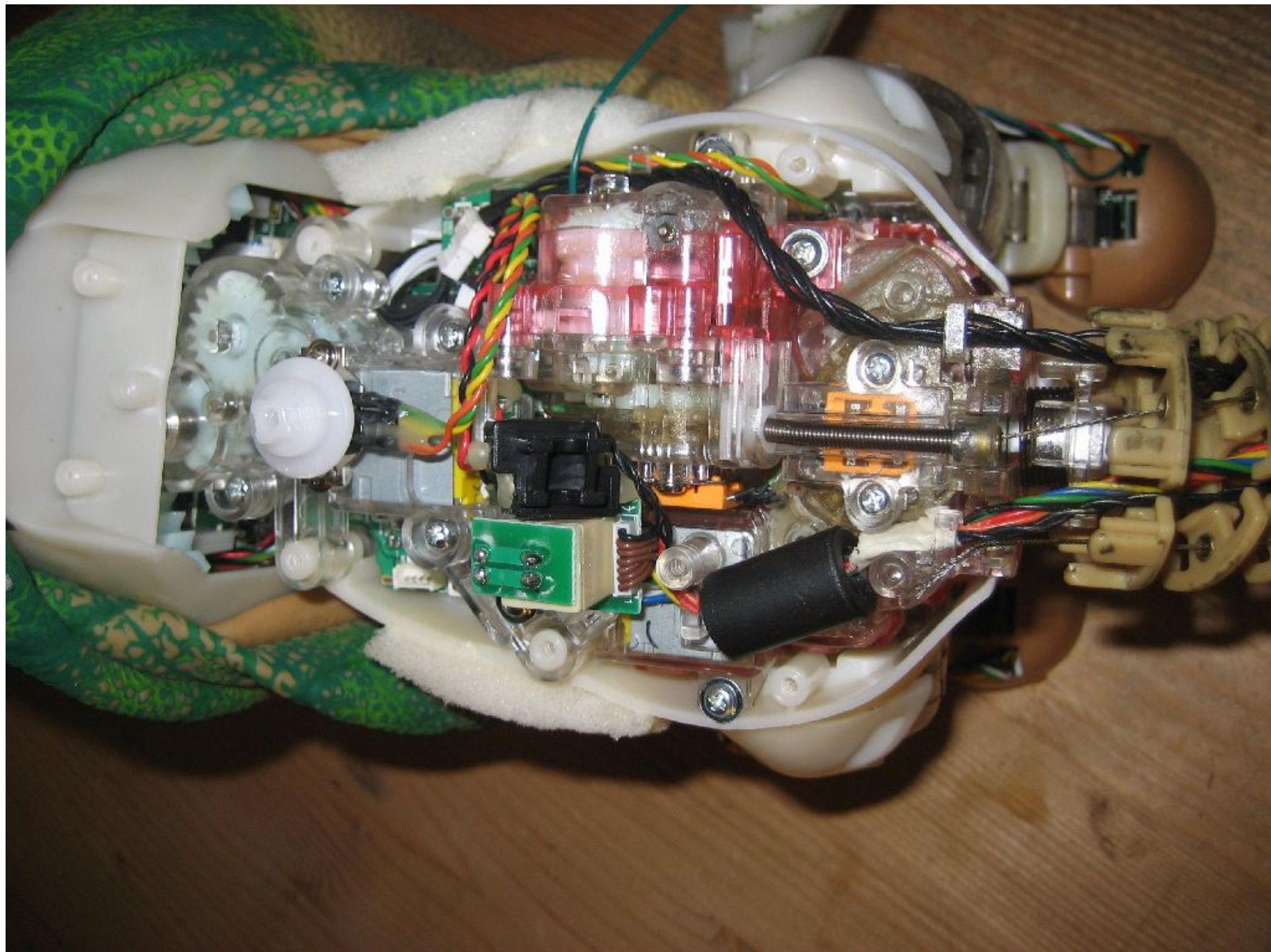


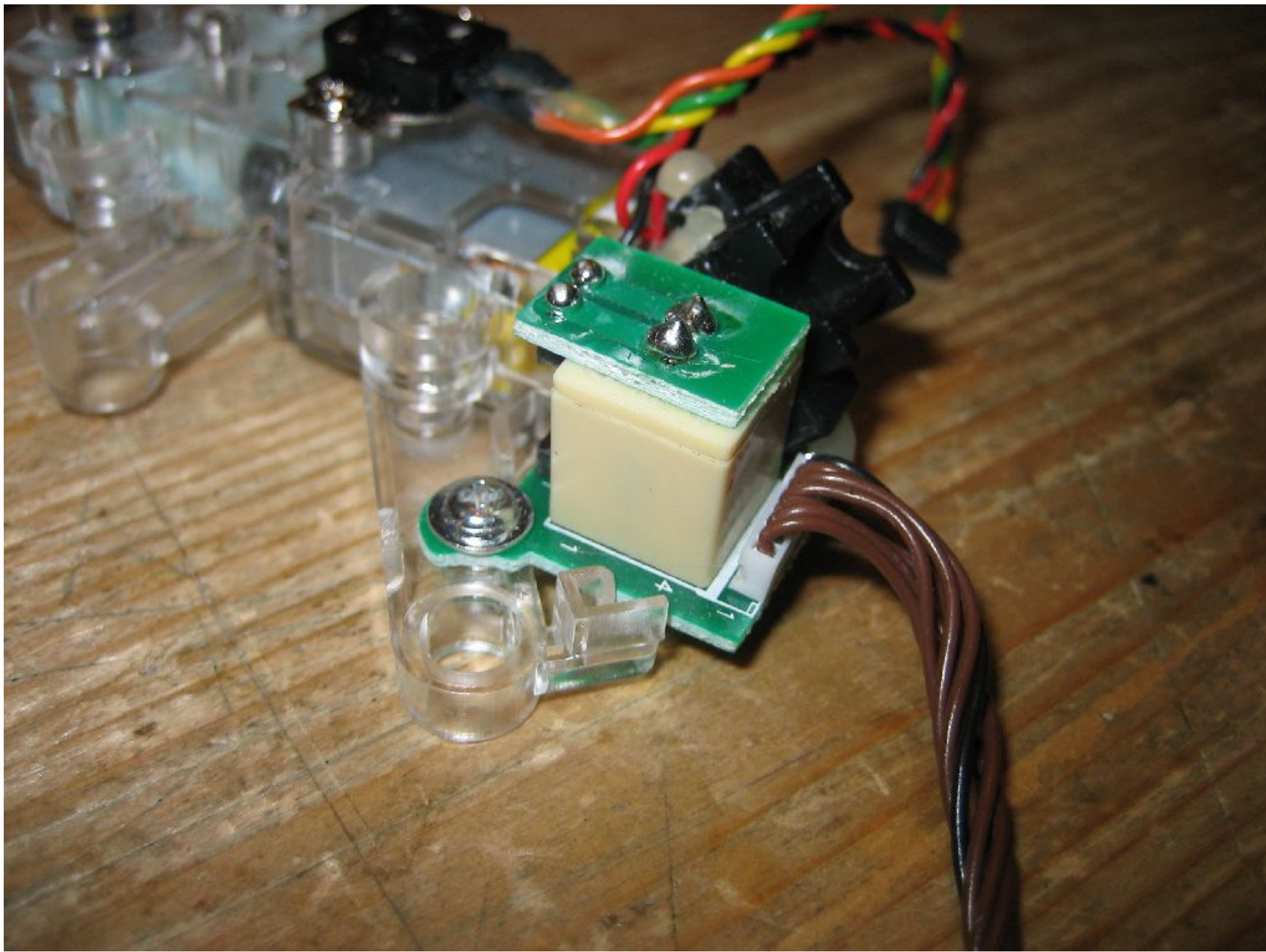


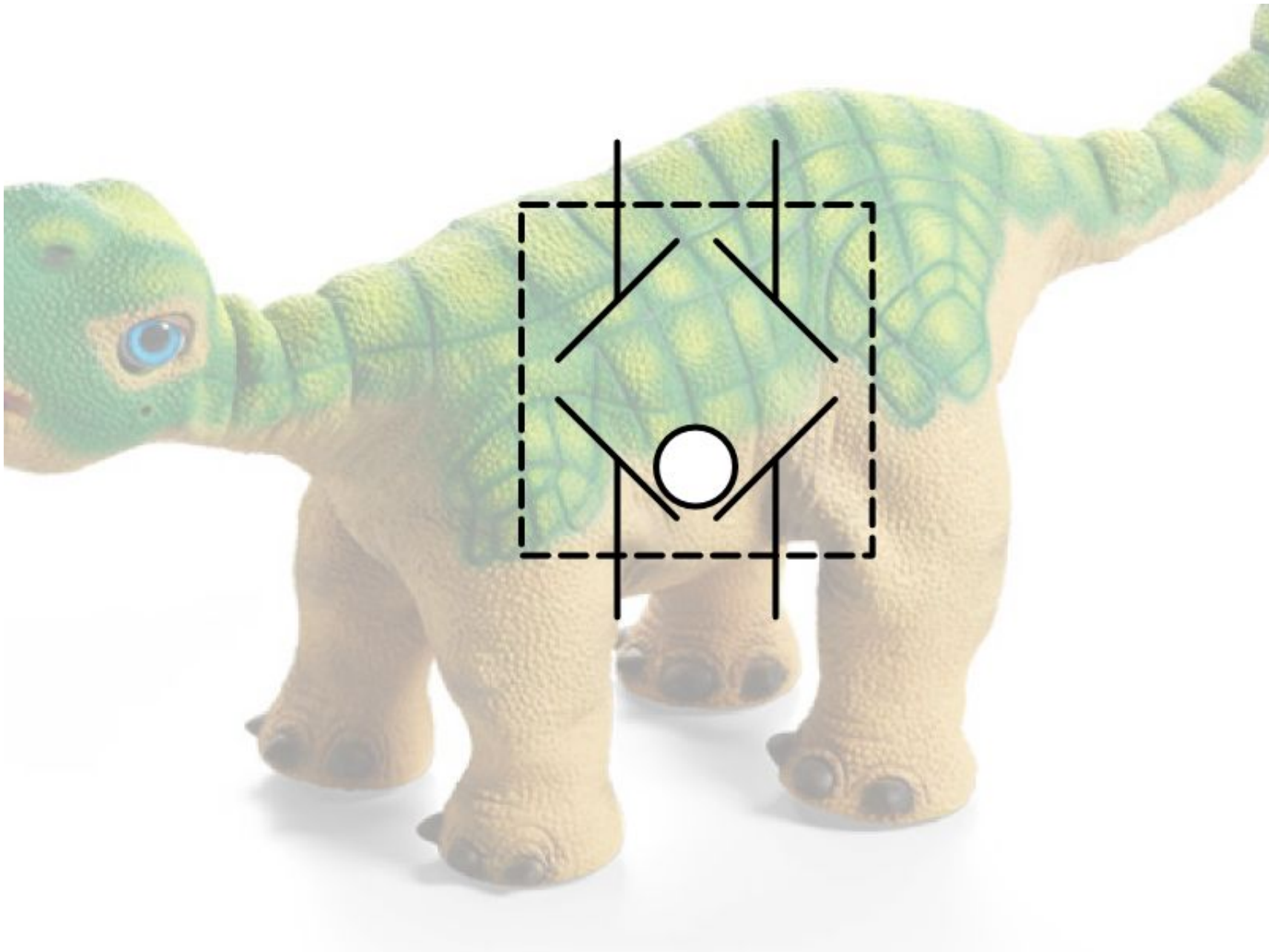


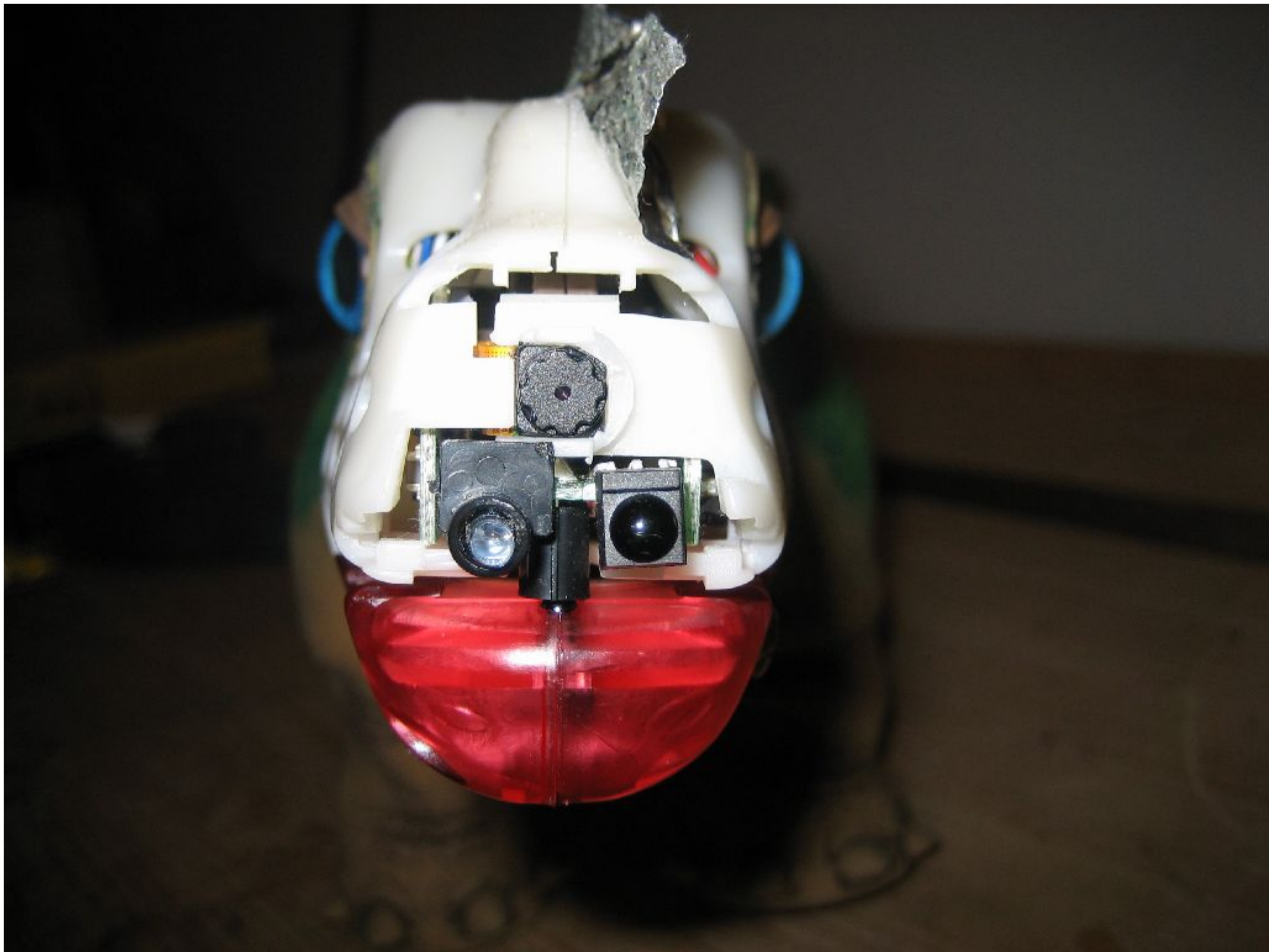






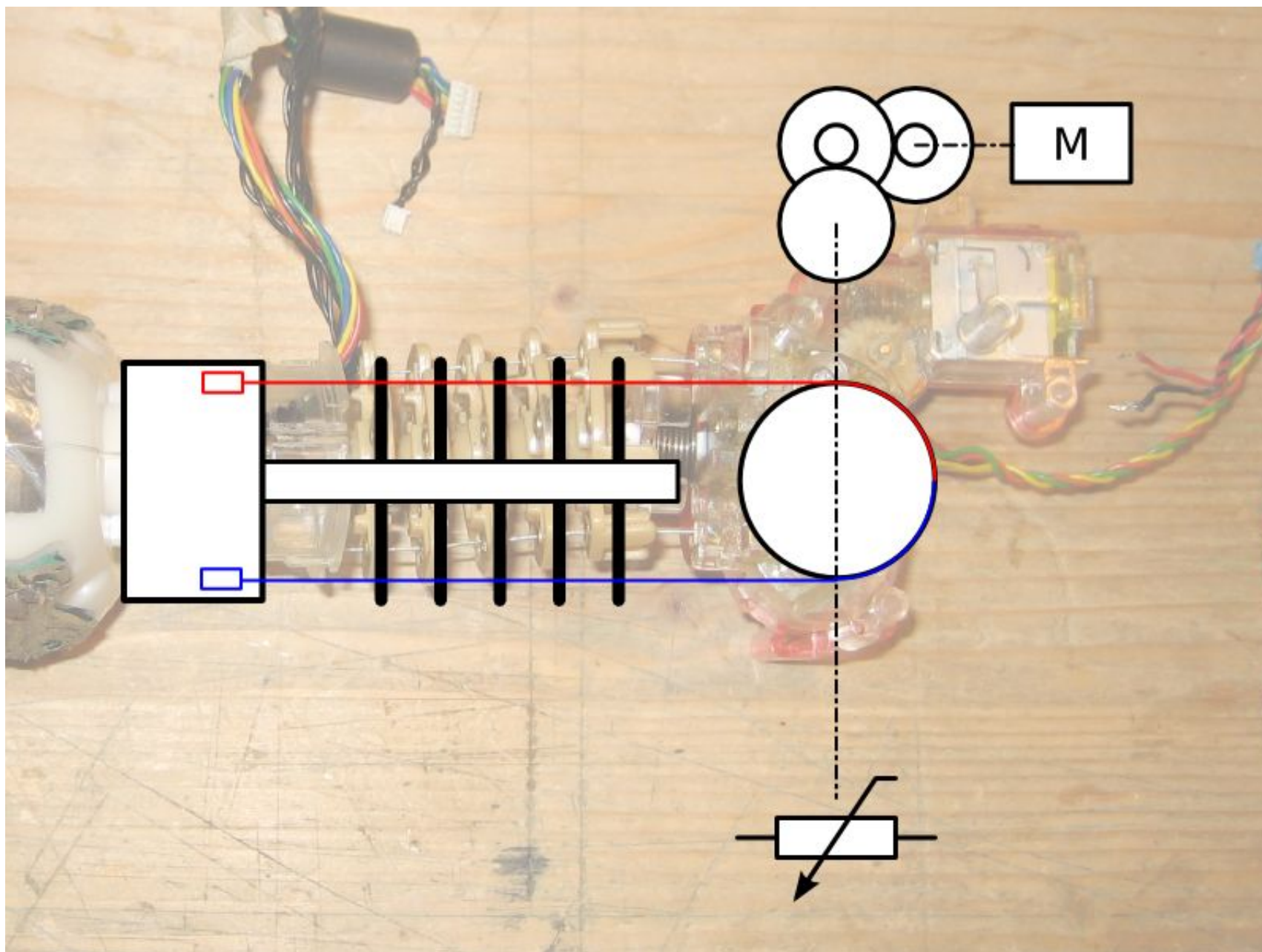


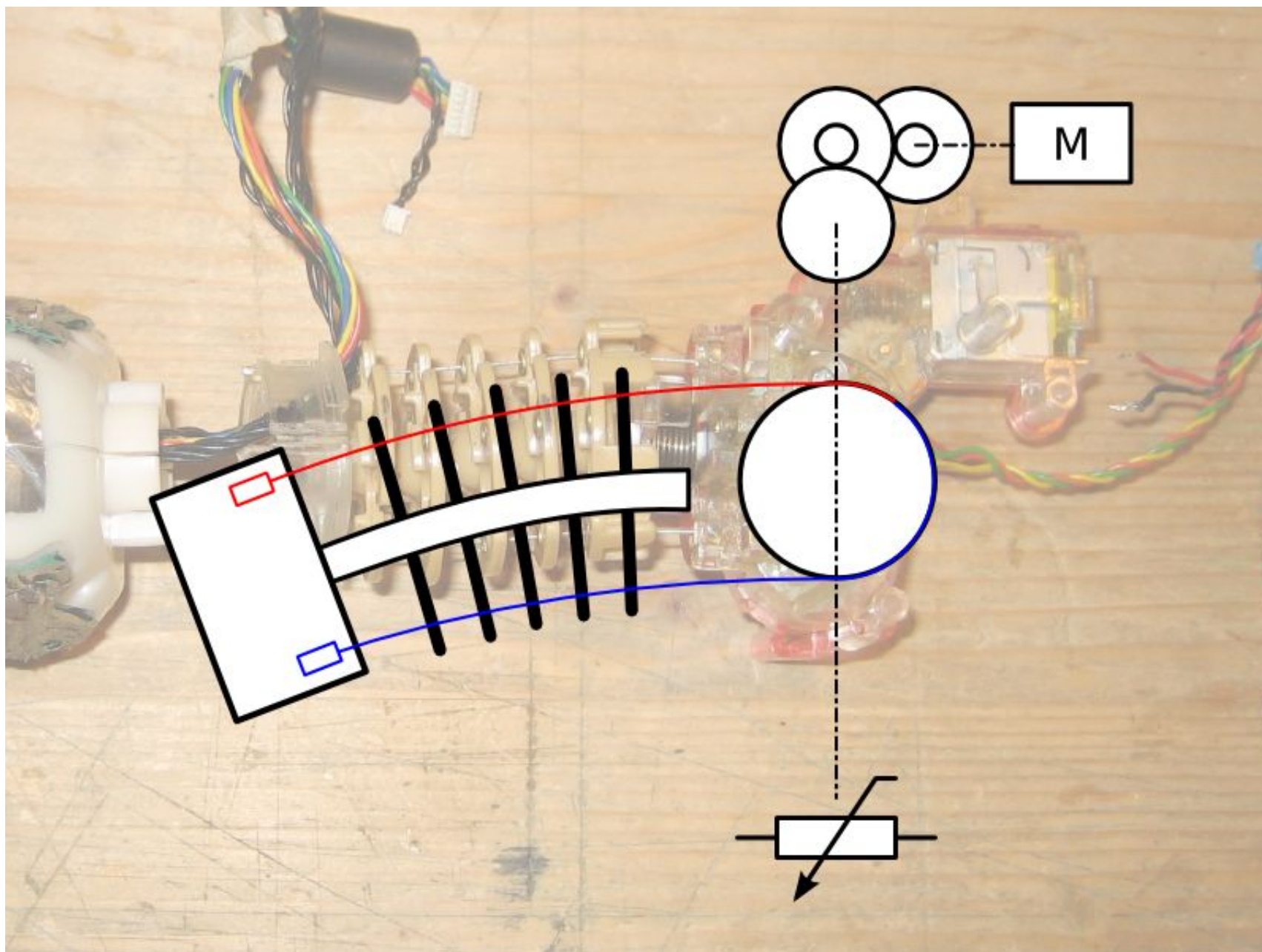






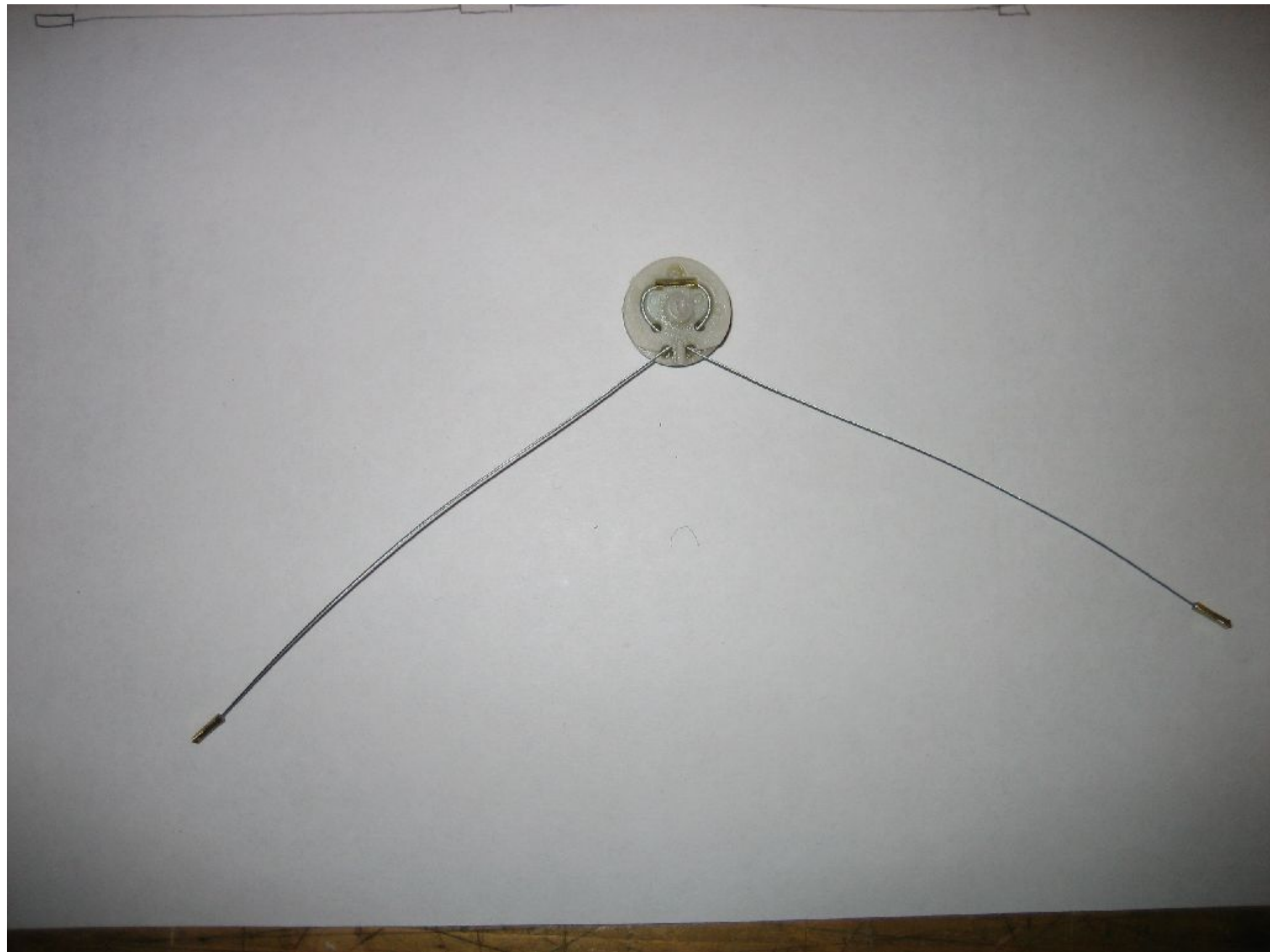




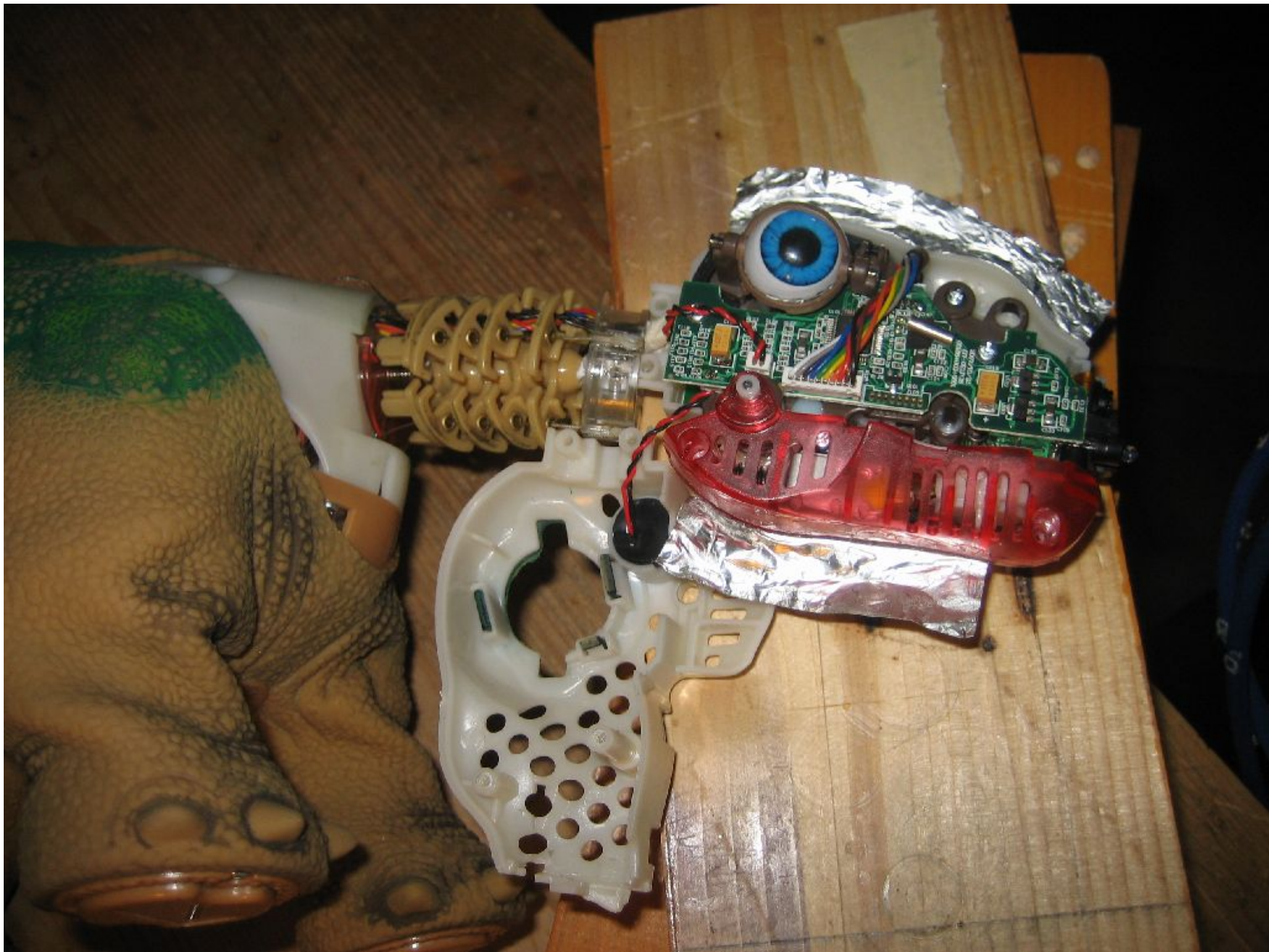


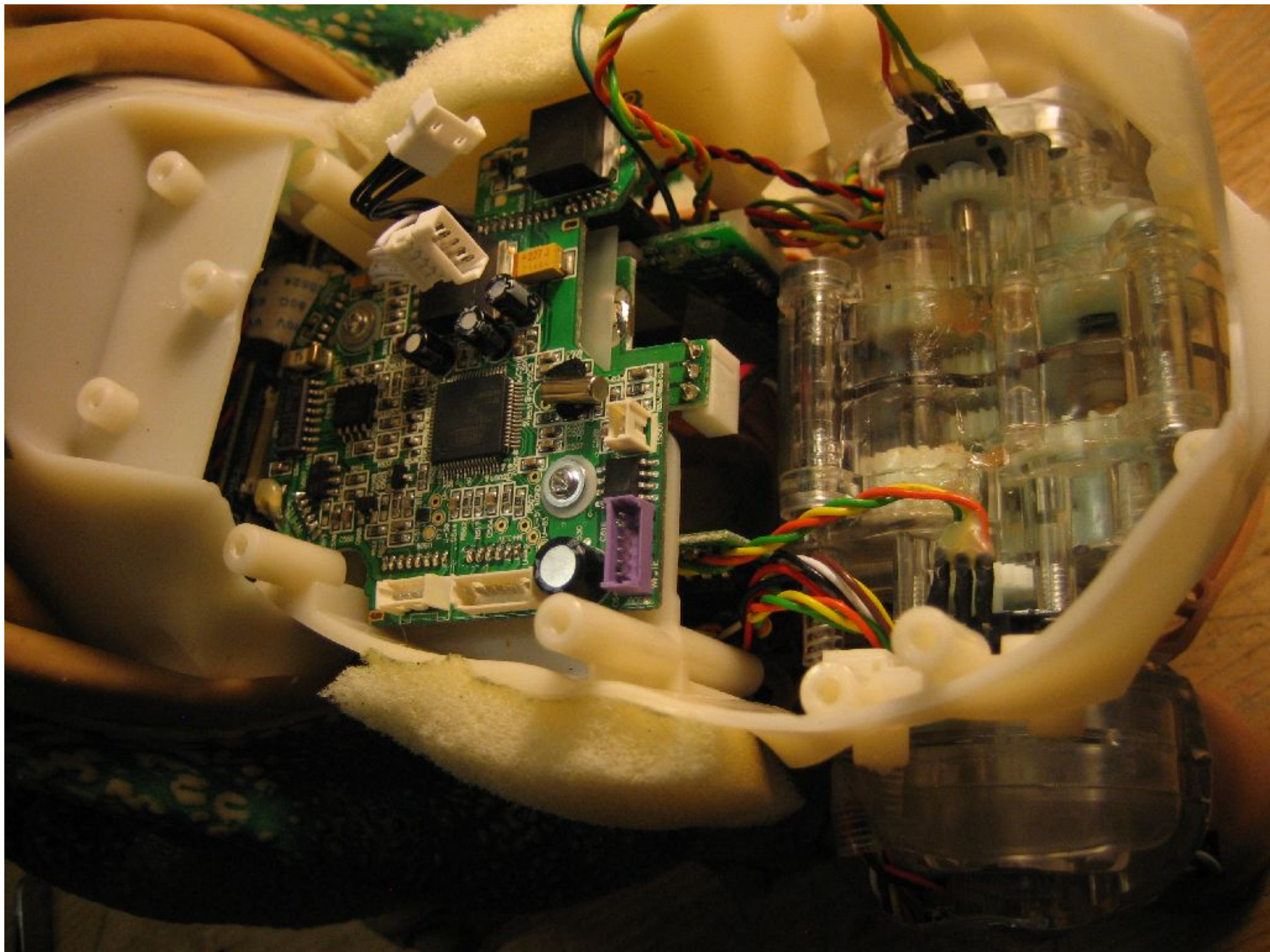


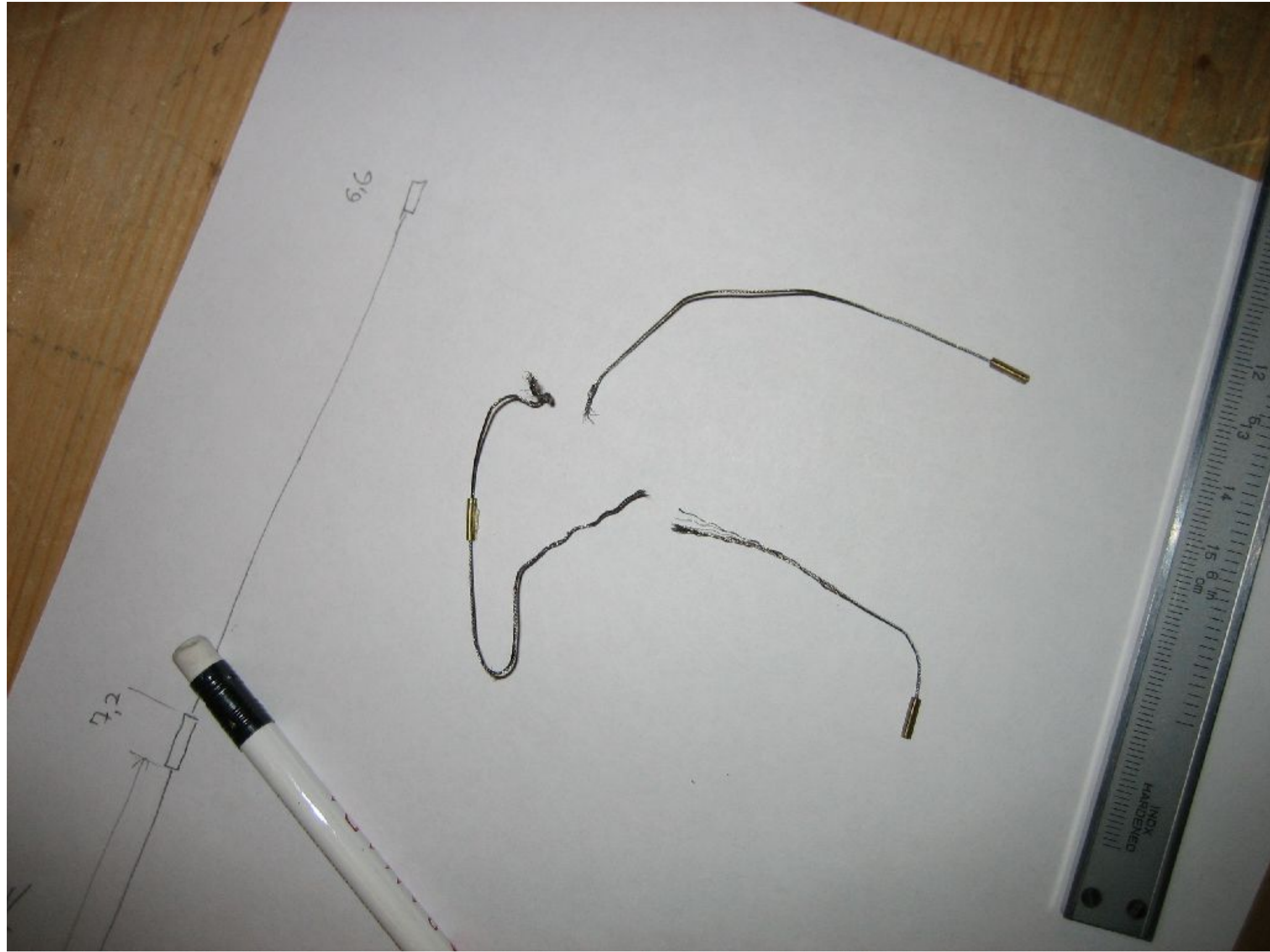












6'9'

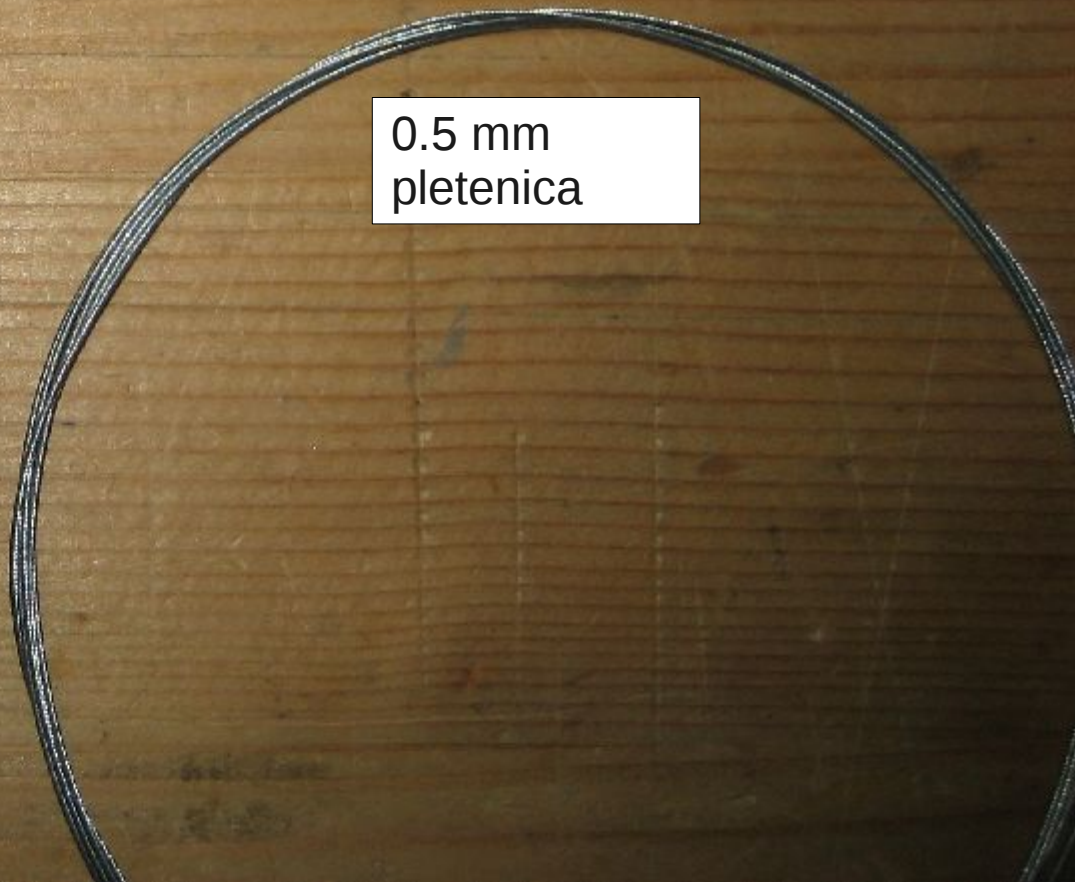
7'2'

INCH
HARDENED

2.0 mm
medeninasta
cevka



0.5 mm
pletenica

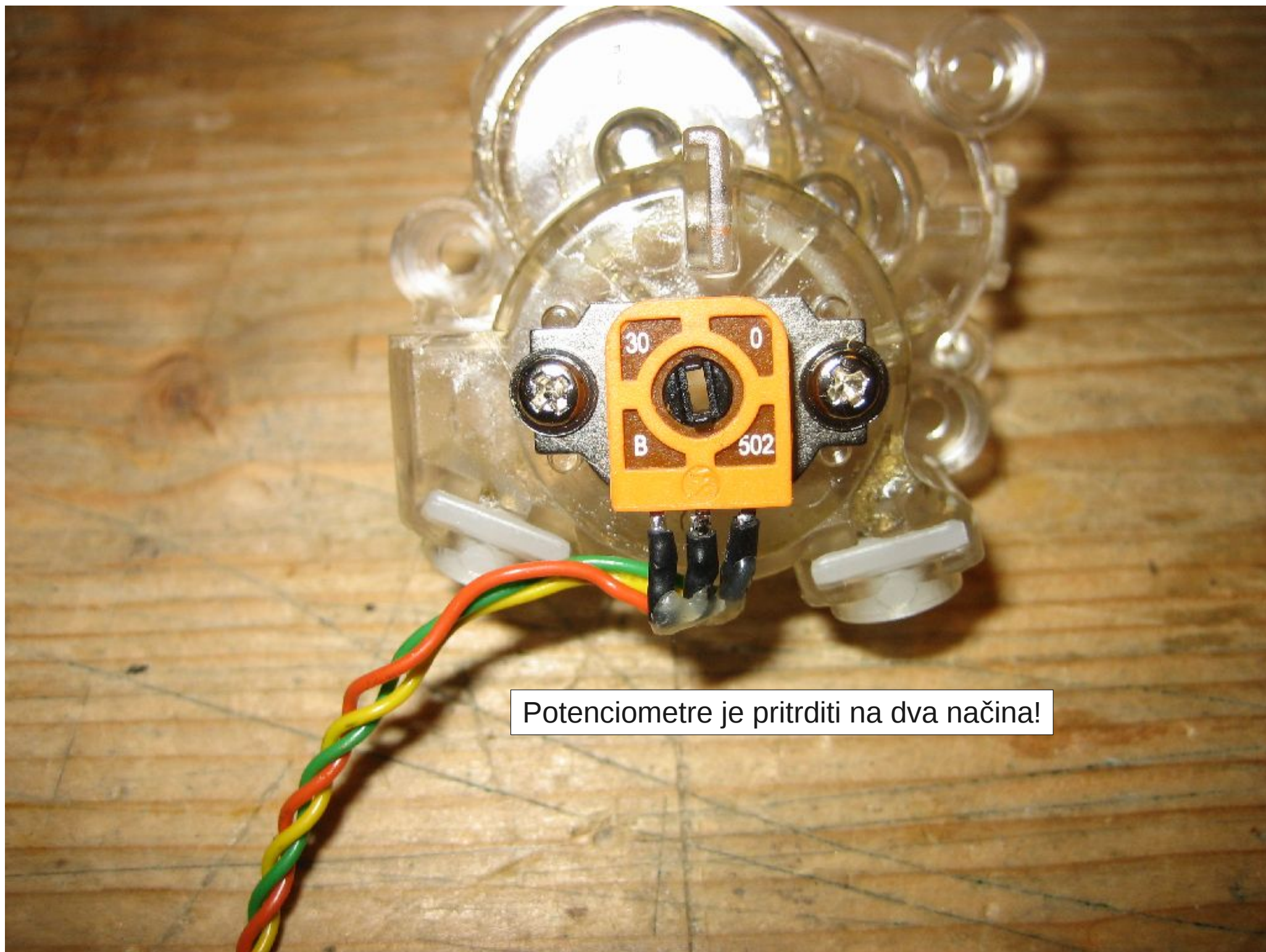




Nasveti



Dokumentacija, dokumentacija, dokumentacija!



Potenciometre je pritrditi na dva načina!

Kje lahko izveste več

- I, Pleo. *Make Magazine*, volume 8, stran 28
- [*http://pleoworld.com/developer*](http://pleoworld.com/developer)
- [*http://www.tablix.org/~avian/blog*](http://www.tablix.org/~avian/blog)

Vprašanja?