



HARDWARE 1.1

KRAKEGG

Bionic actuation for soft robotics grippers

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of Catalonia

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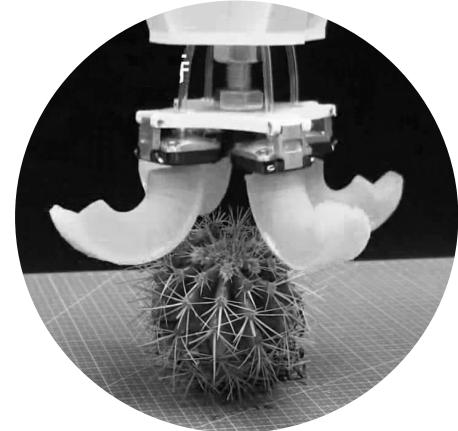
- 1. Research overview
- 2. Prototype 01
- 3. Concept
- 4. Prototype 02
- 5. Test blocks
- 6. Prototype 03
- 7. Preliminary conclusions

**SOFT ROBOTICS**

Actuated soft elastomeric end effectors that enable industrial applications that previously were off-limits to automation

**VERSABALL CORNELL UNIVERSITY**

Robotic grippers that "jam" granular materials by vacuum-packing

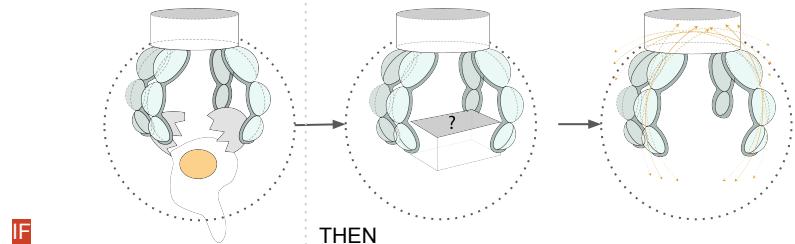
**BEIHANG UNIVERSITY**

Soft Pneumatic Gripper



KRAKEGG

Bionic actuation for soft robotics grippers



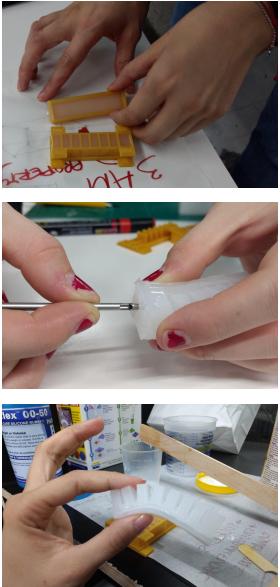
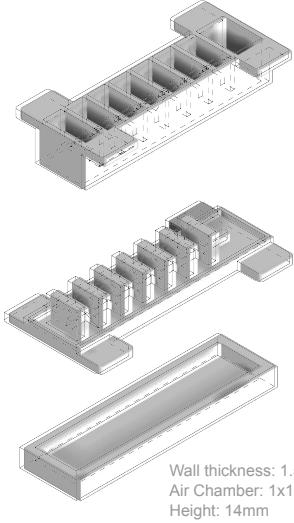
CAN CRACK AN EGG

SHAPE AROUND RANDOM OBJECTS

PROGRAM COMPLEX LIFE-LIKE MOVEMENT

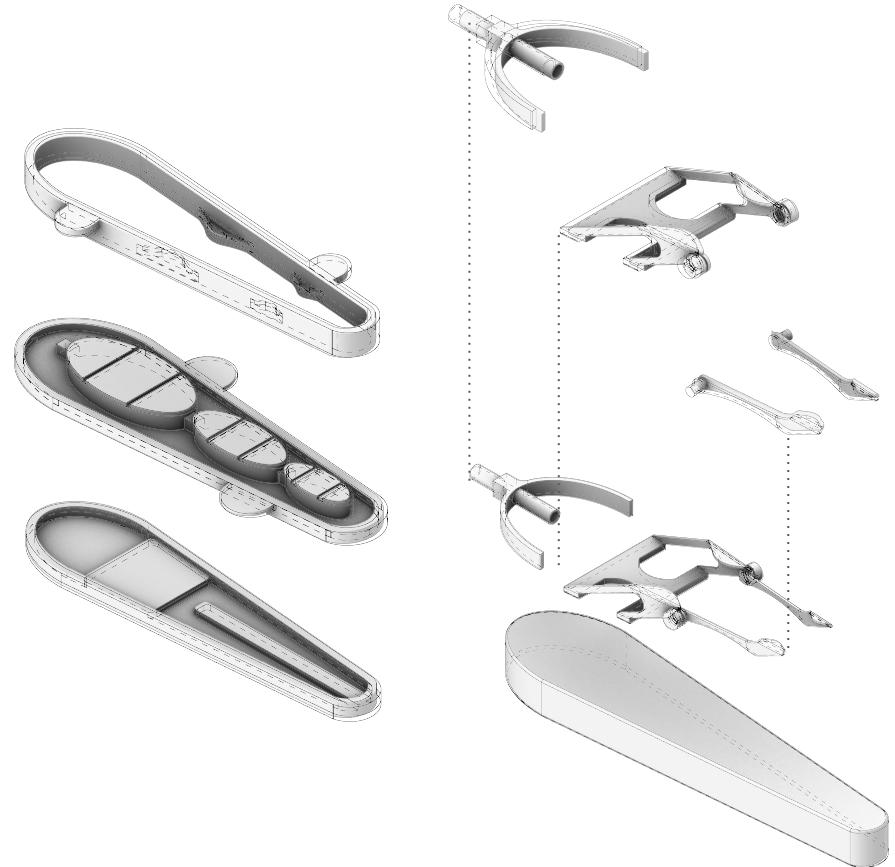
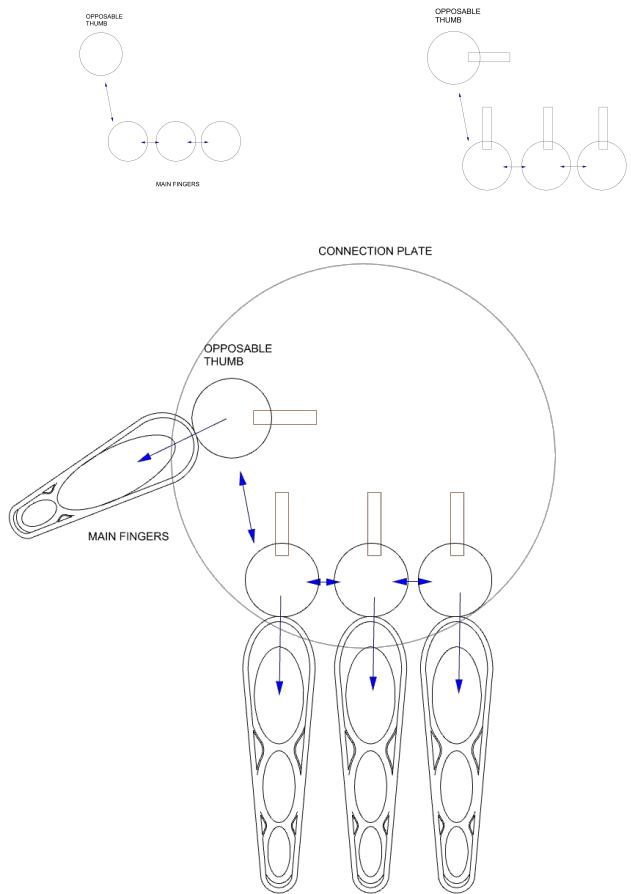
PROTOTYPE 01

SOFT ROBOTICS GRIPPERS



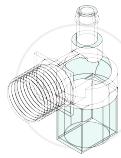
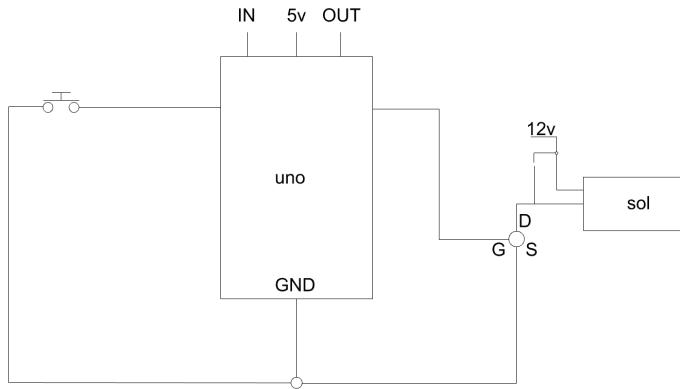
CONCEPT

SOFT ROBOTICS GRIPPERS

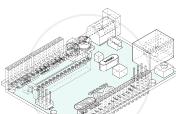


PROTOTYPE 02

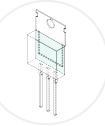
BIONIC FINGER DESIGN 01



SOLENOID



ARDUINO UNO



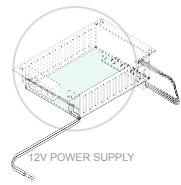
MOSFET



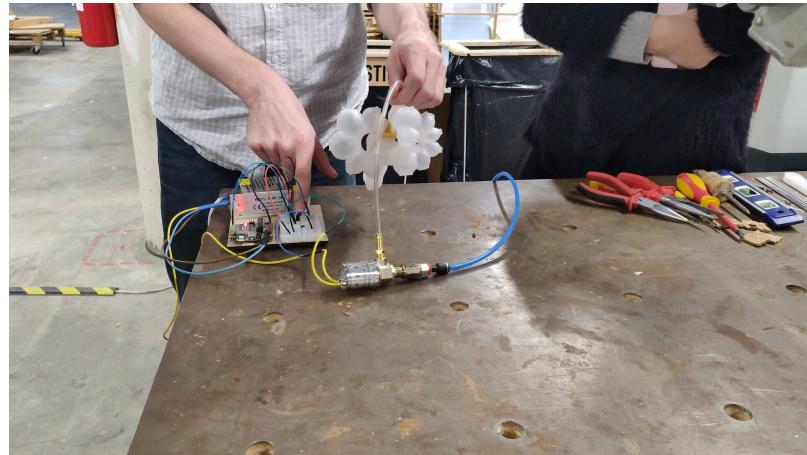
DIODE



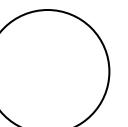
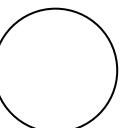
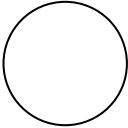
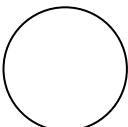
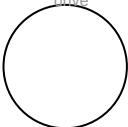
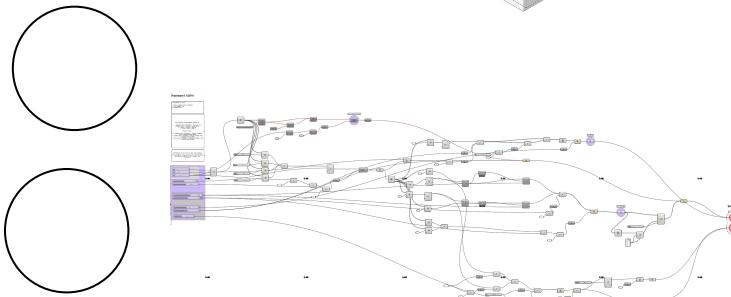
BREADBOARD



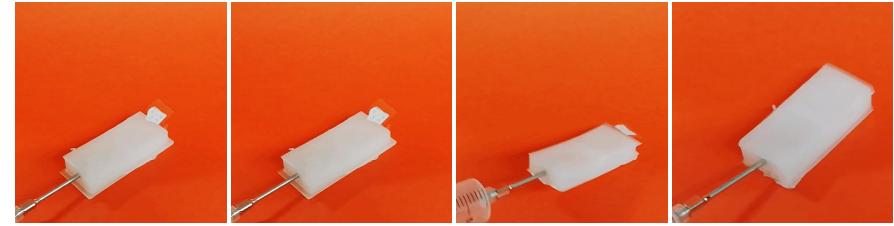
2V POWER SUPPLY



TEST BLOCKS



BIONIC FINGER DESIGN 01



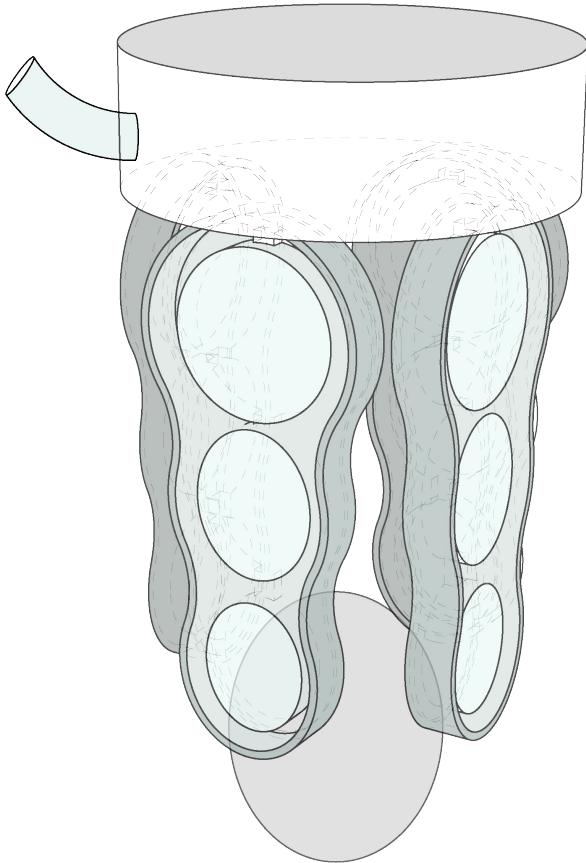
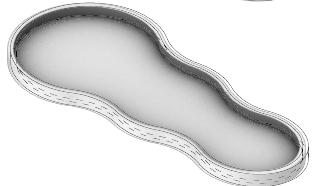
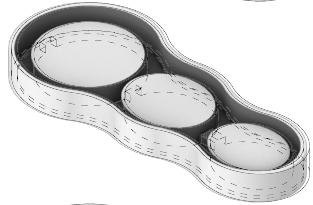
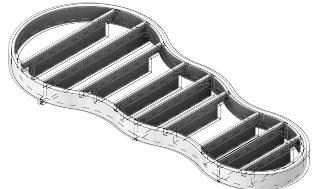
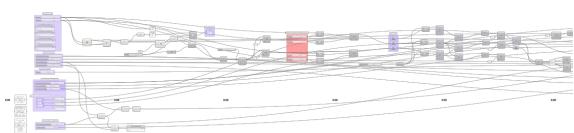
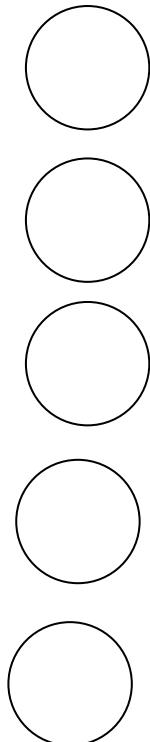
Mould
parameters
icons / tiny line
diagrams ->
parameters
screenshot on
drive

PROTOTYPE 03

BIONIC FINGER DESIGN 01

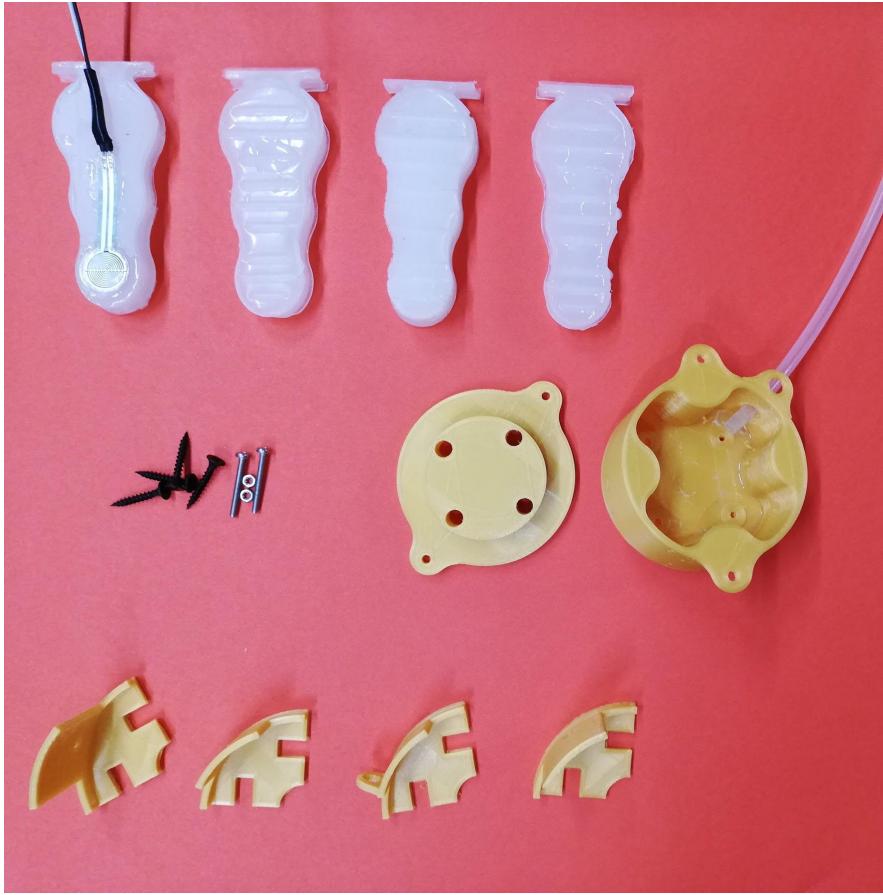
Mould
parameters
icons / tiny line
diagrams

-> left
screenshot of
parameters on
the drive



PROTOTYPE 03

BIONIC FINGER AND CONNECTION DESIGN 01



ROBOT CONNECTION COMPONENT

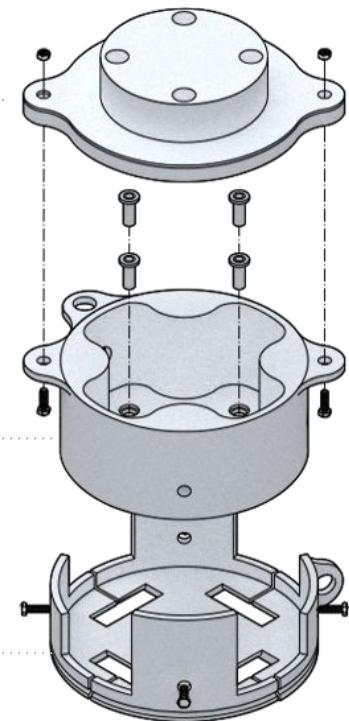
Component that attaches the end effector to the ABB-140

AIR CHAMBER

Distribution of the air to the different fingers cavities

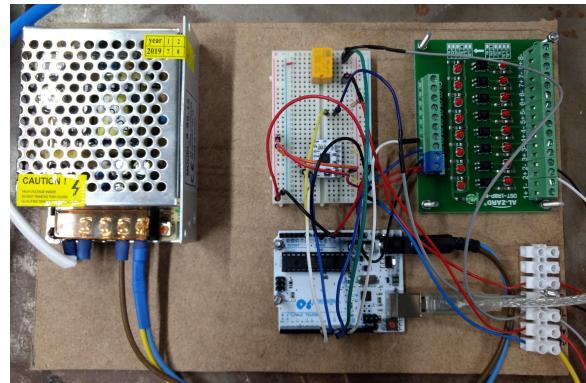
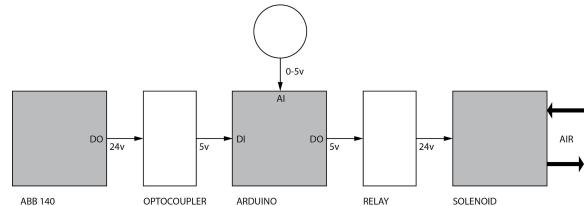
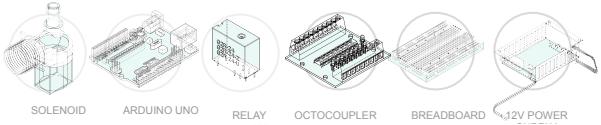
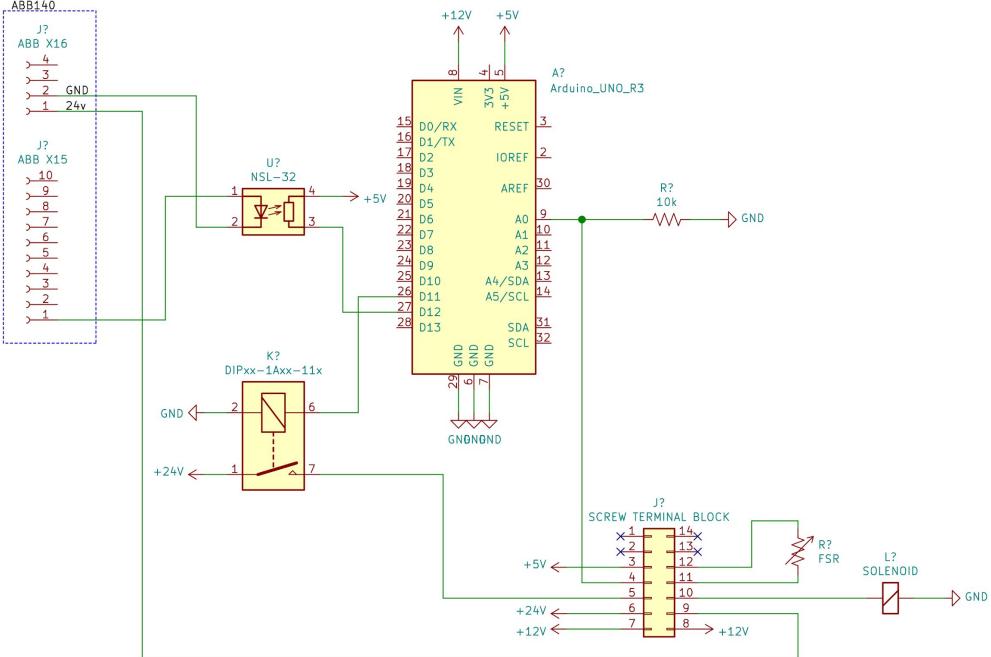
FINGER SUPPORT

Holding structure for the soft robotic fingers



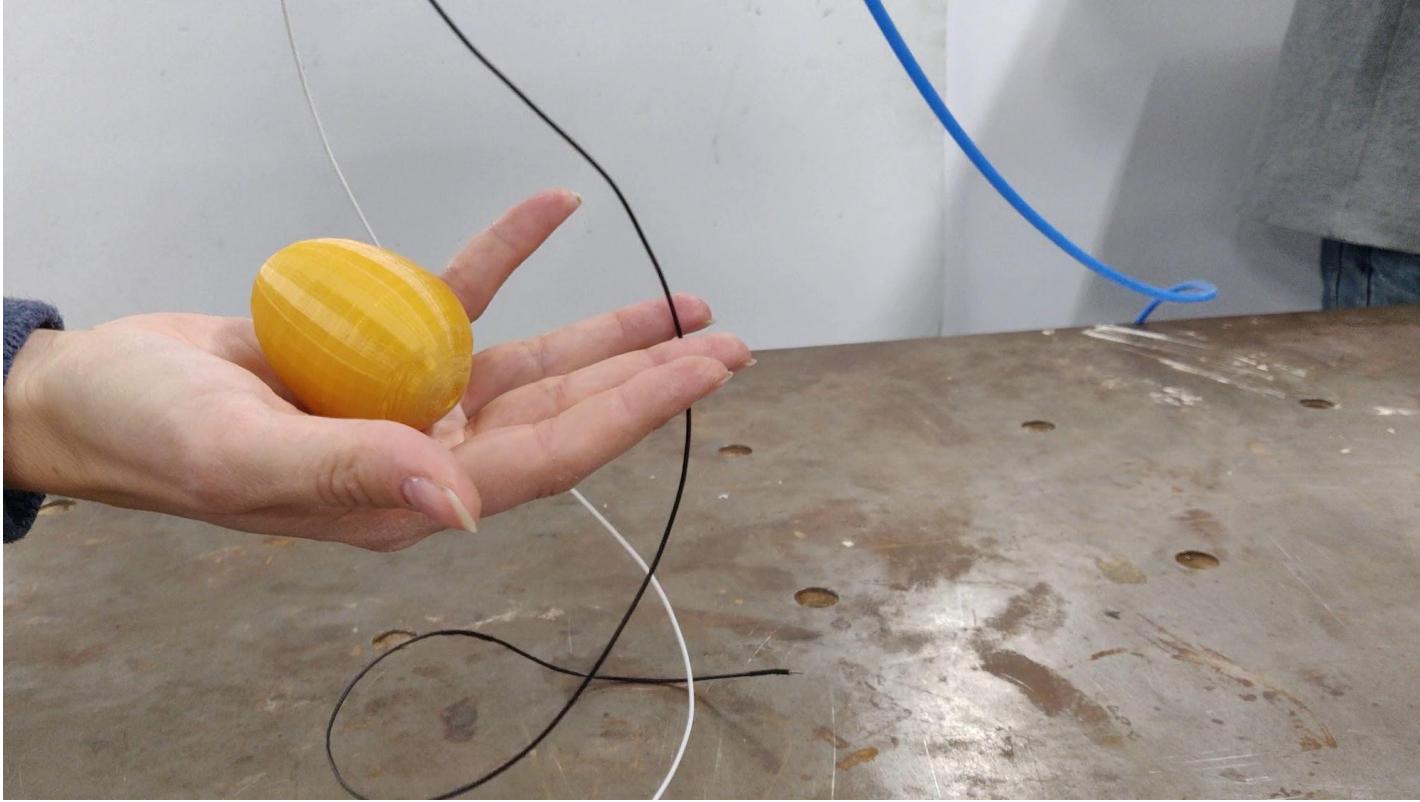
PROTOTYPE 03

CIRCUIT



PROTOTYPE 03

PERFORMANCE- GRIPPING TEST



PROTOTYPE 03

PERFORMANCE SENSING TEST

