



HARDWARE 1.1

KRAKEGG

Bionic actuation for soft robotics grippers

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advanced
architecture
of Catalonia

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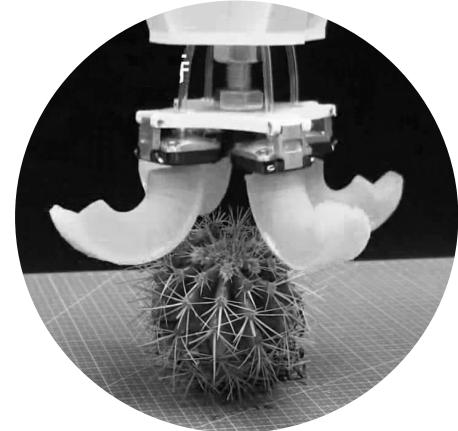
- 1. Research overview
- 2. Prototype 01
- 3. Concept
- 4. Prototype 02
- 5. Test blocks
- 6. Prototype 03
- 7. Preliminary conclusions

**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

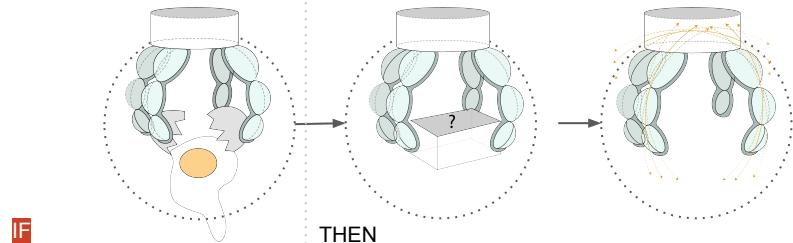
**BEIHANG UNIVERSITY**

Soft Pneumatic Gripper



KRAKEGG

Bionic actuation for soft robotics grippers



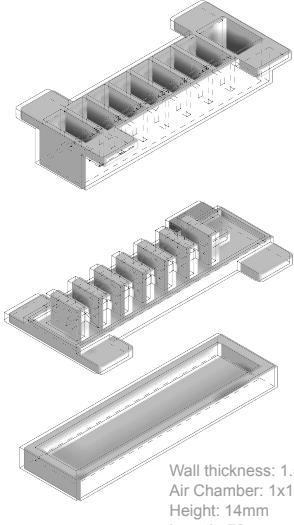
CAN CRACK AN EGG

SHAPE AROUND RANDOM OBJECTS

PROGRAM COMPLEX LIFE-LIKE MOVEMENT

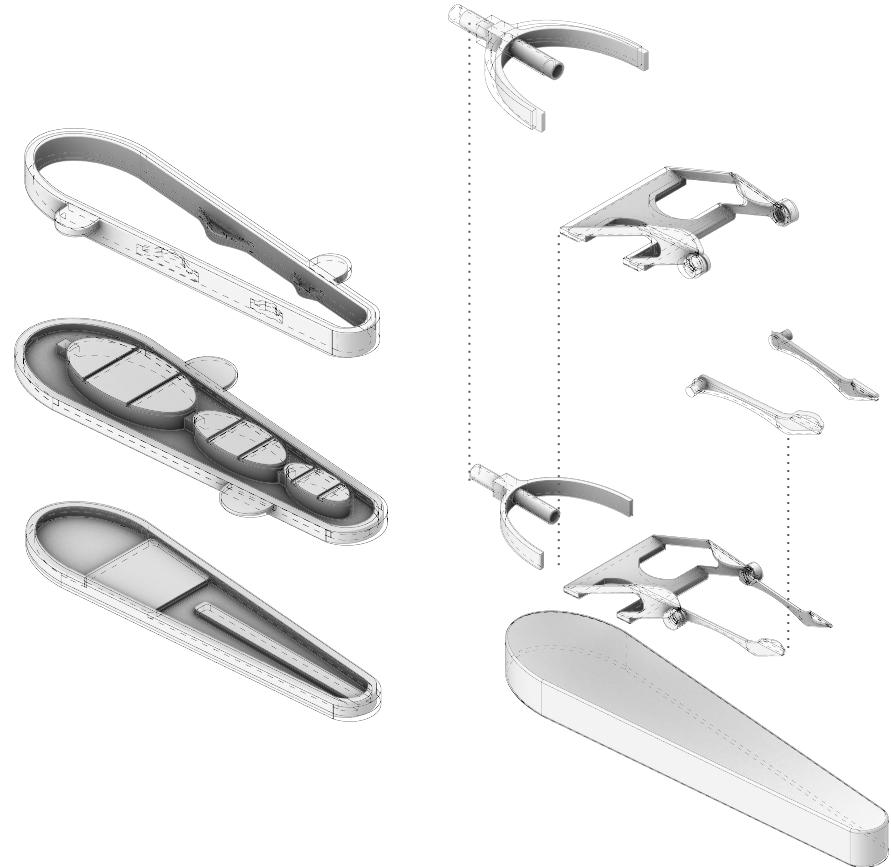
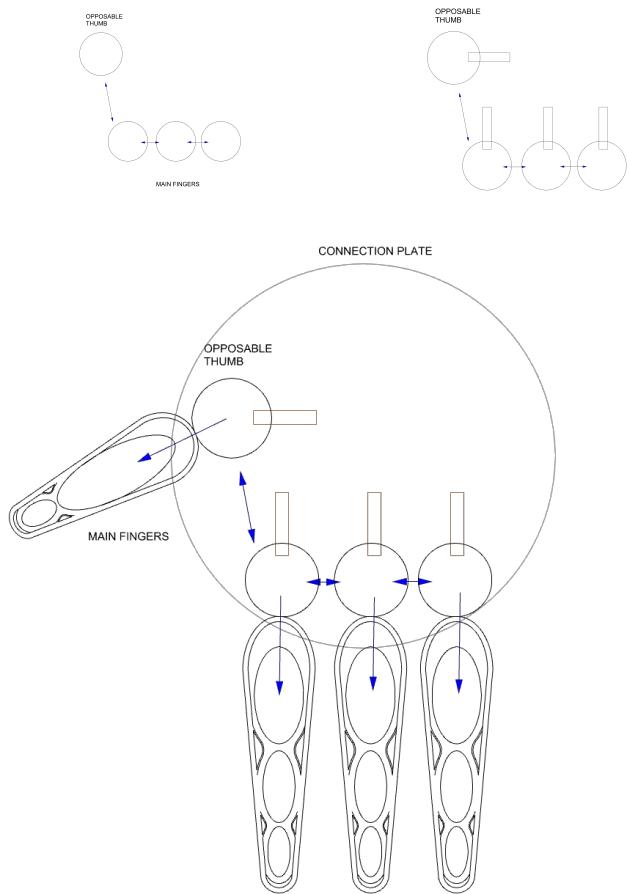
PROTOTYPE 01

SOFT ROBOTICS GRIPPERS



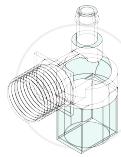
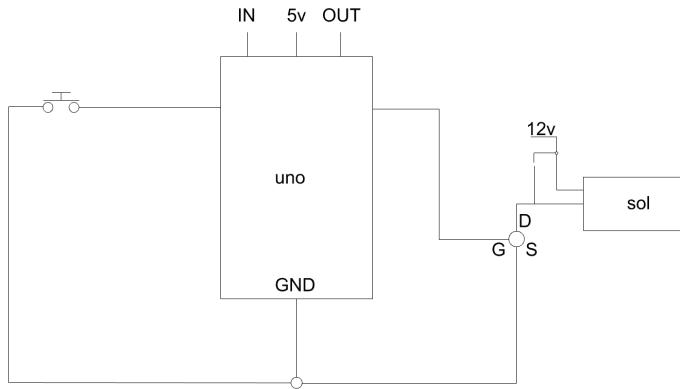
CONCEPT

SOFT ROBOTICS GRIPPERS

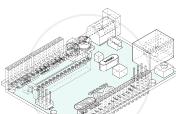


PROTOTYPE 02

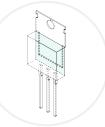
BIONIC FINGER DESIGN 01



SOLENOID



ARDUINO UNO



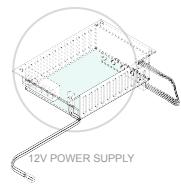
MOSFET



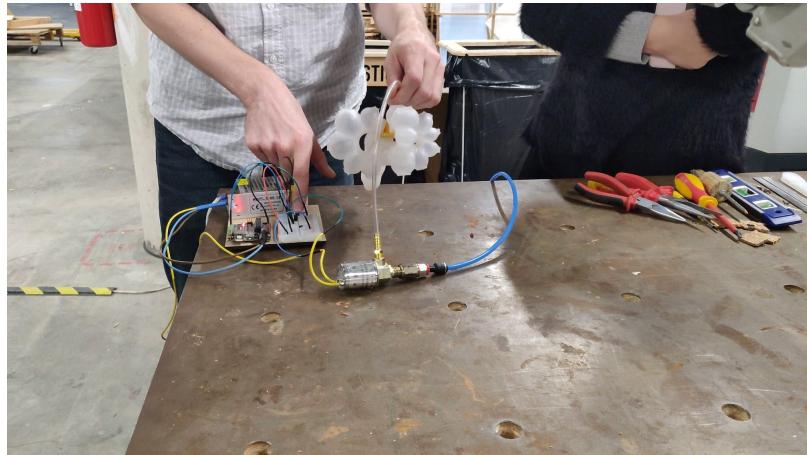
DIODE



BREADBOARD

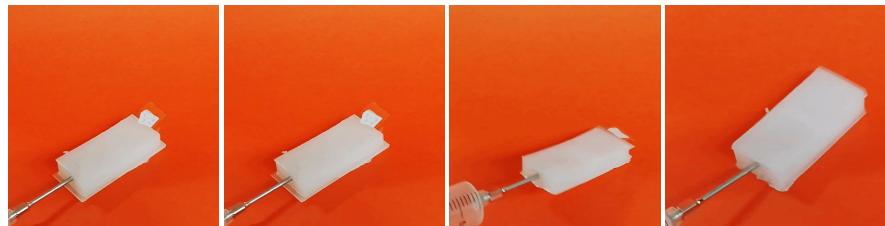
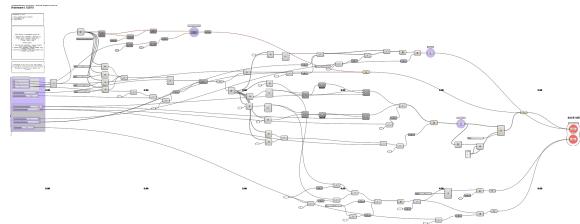
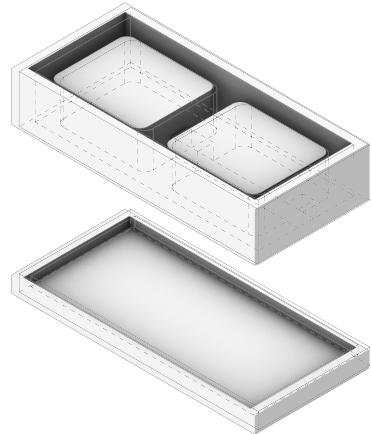


2V POWER SUPPLY



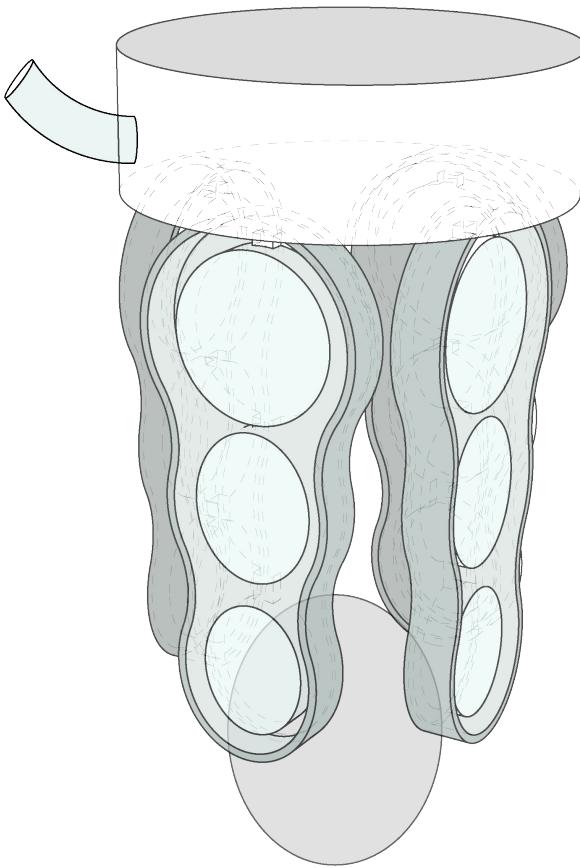
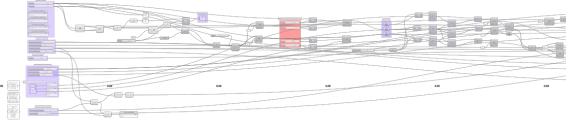
TEST BLOCKS

BIONIC FINGER DESIGN 01



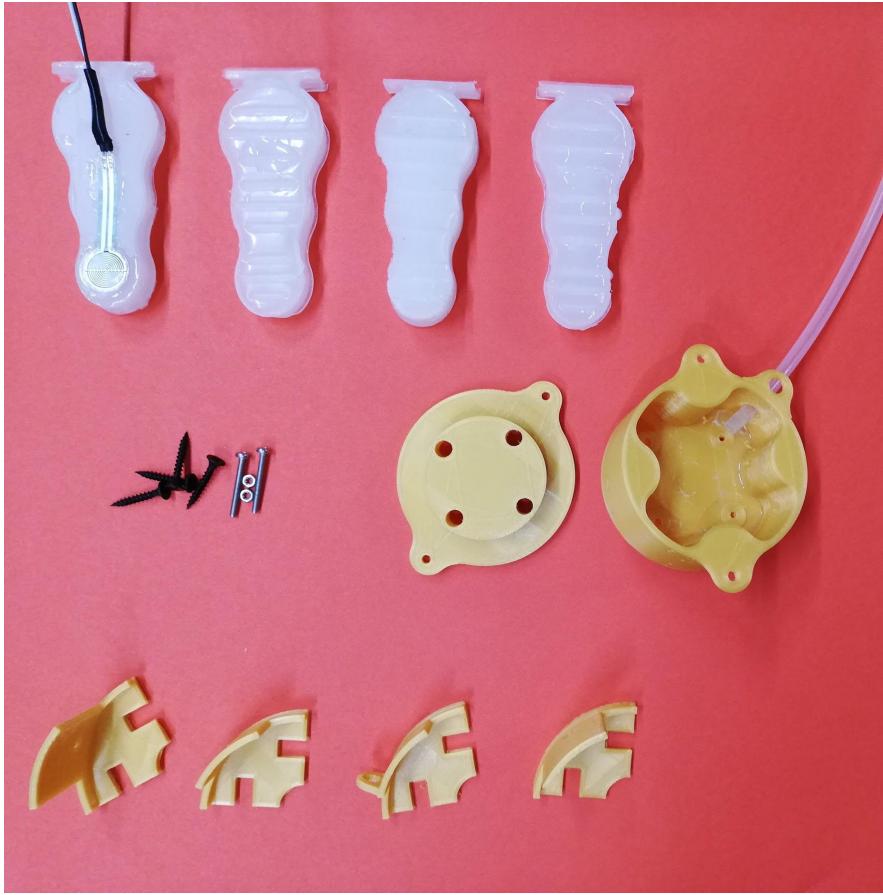
PROTOTYPE 03

BIONIC FINGER DESIGN 01



PROTOTYPE 03

BIONIC FINGER AND CONNECTION DESIGN 01



ROBOT CONNECTION COMPONENT

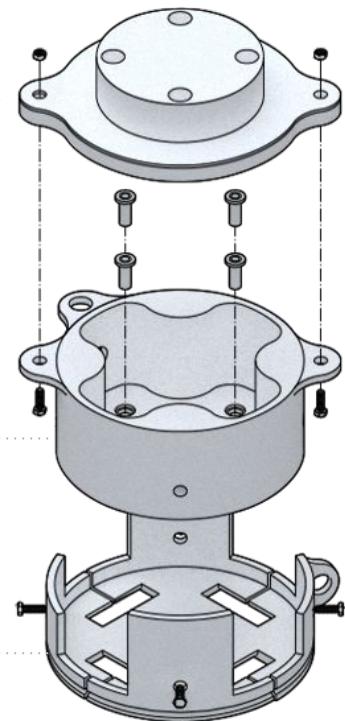
Component that attaches the end effector to the ABB-140

AIR CHAMBER

Distribution of the air to the different fingers cavities

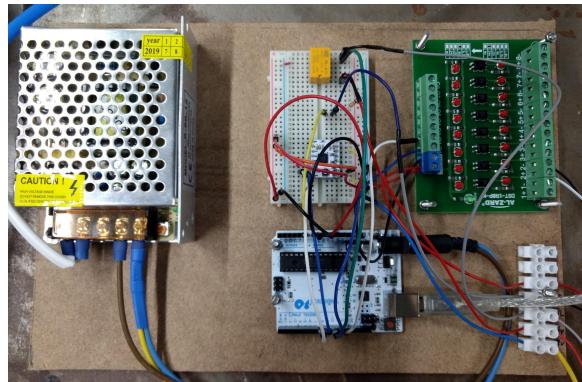
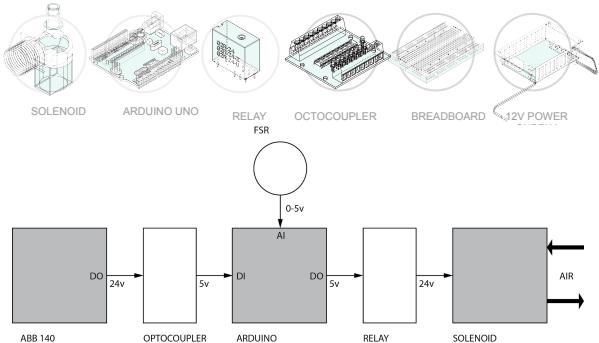
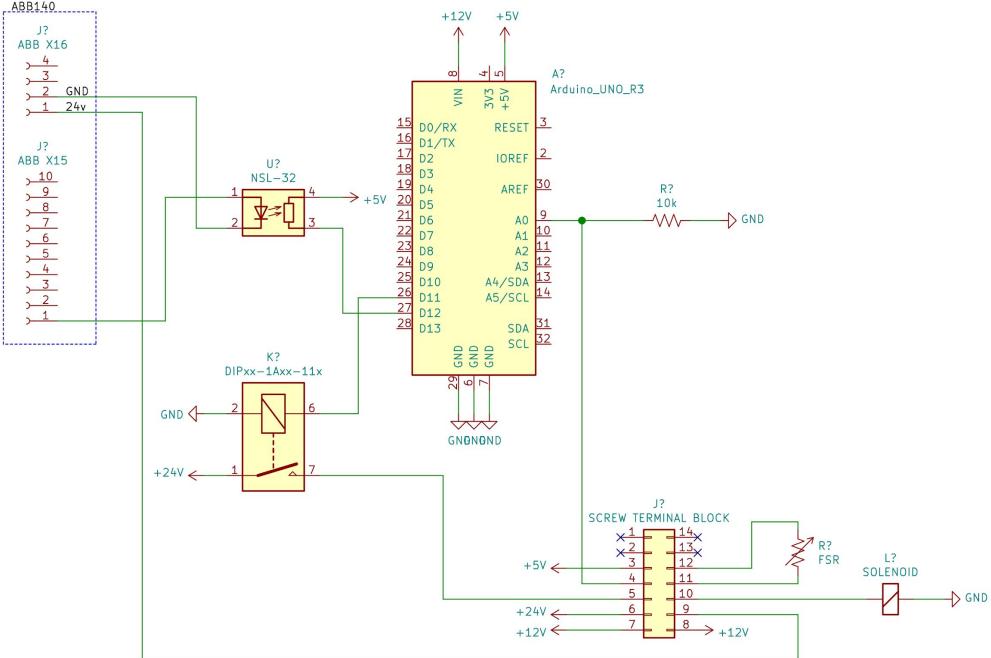
FINGER SUPPORT

Holding structure for the soft robotic fingers



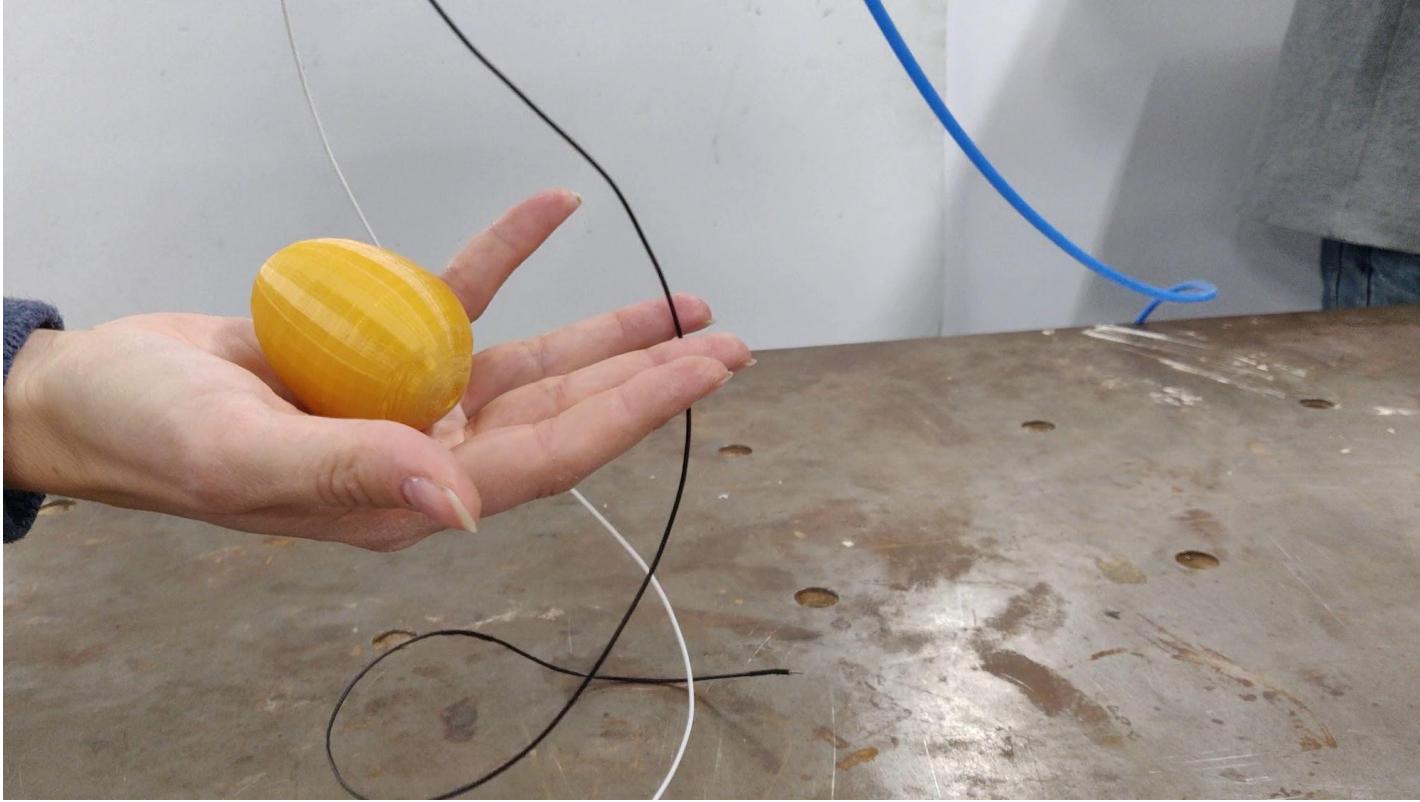
PROTOTYPE 03

CIRCUIT



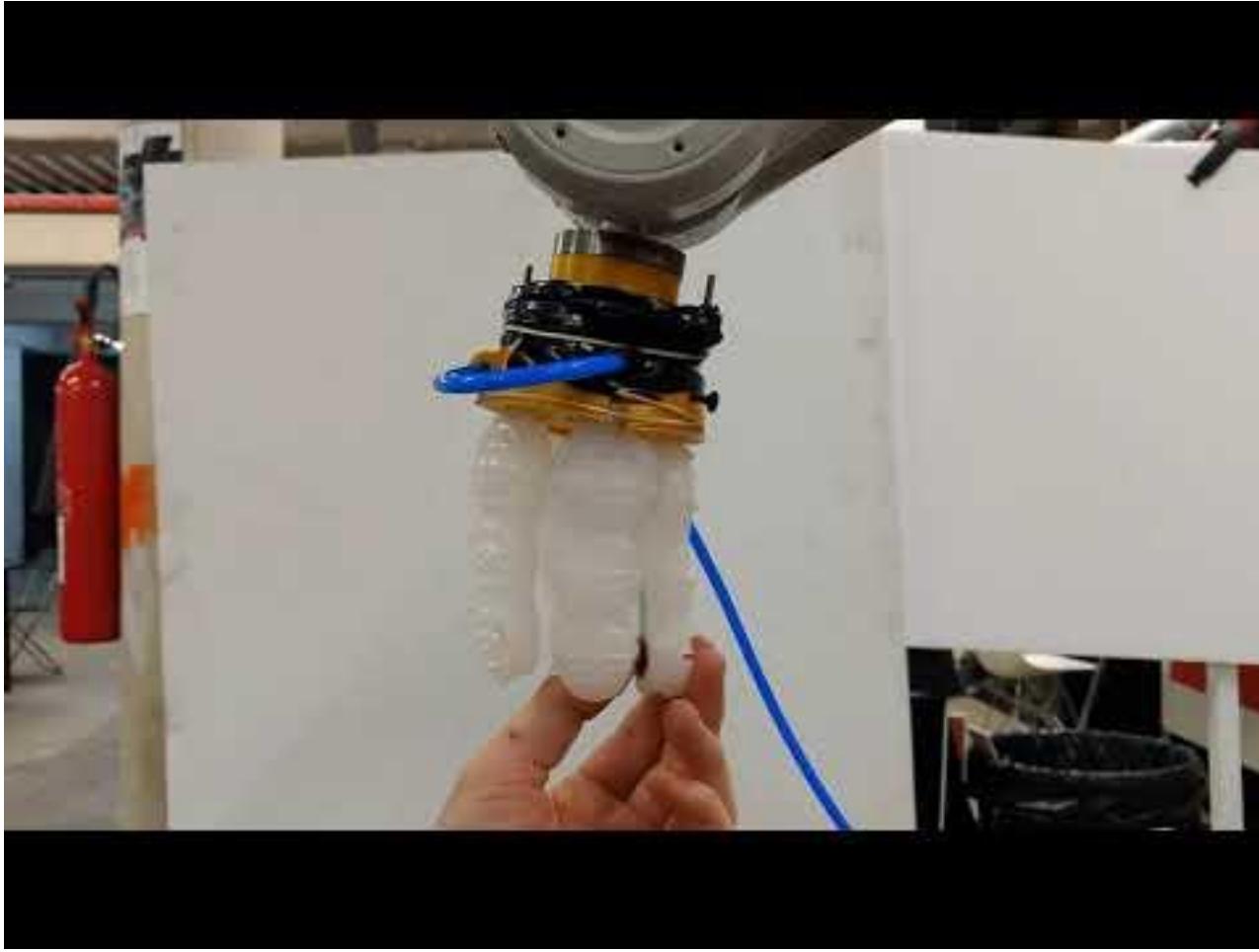
PROTOTYPE 03

PERFORMANCE- GRIPPING TEST



PROTOTYPE 03

PERFORMANCE SENSING TEST



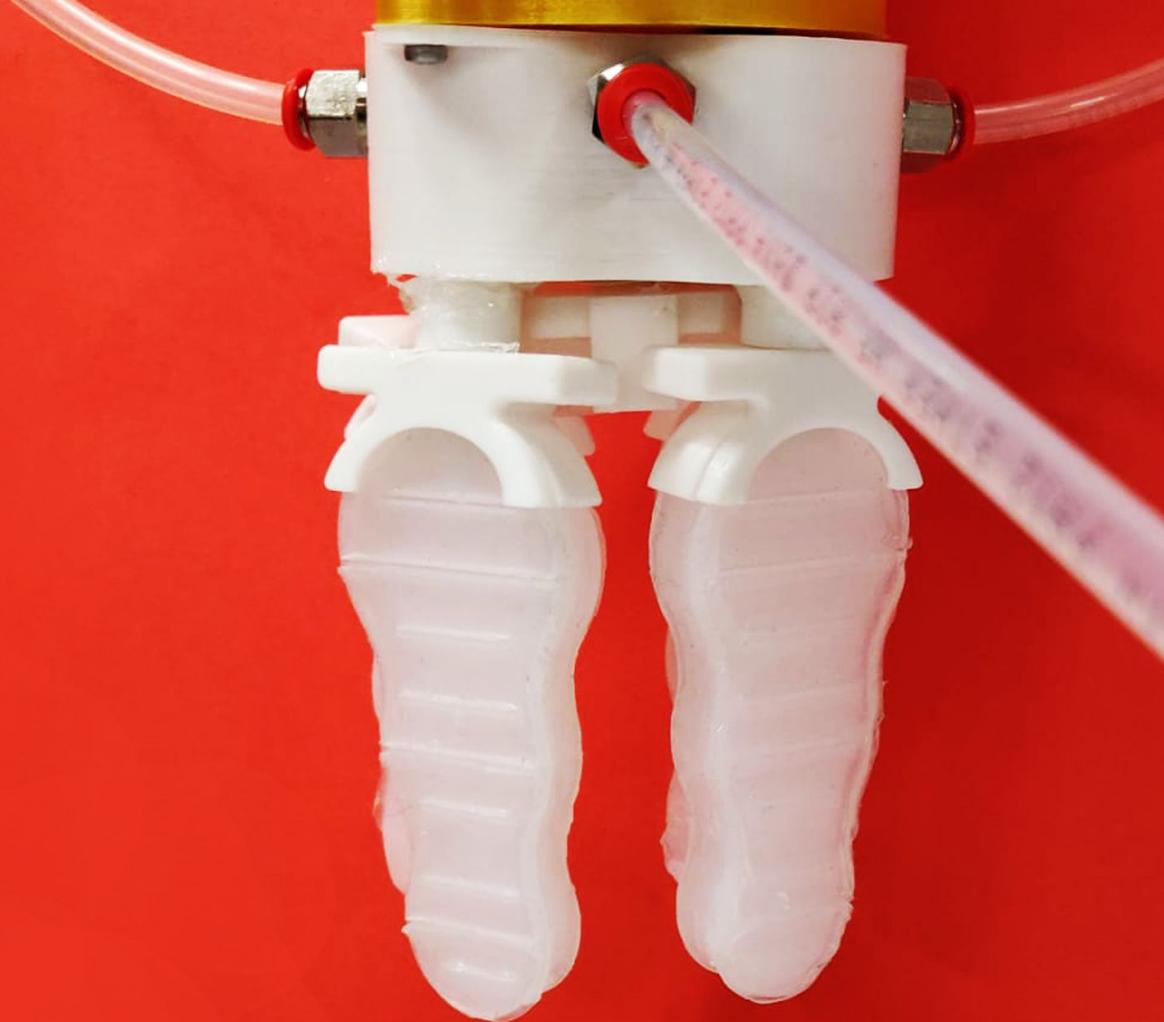


PROTOTYPE 04

FINAL PROPOSAL

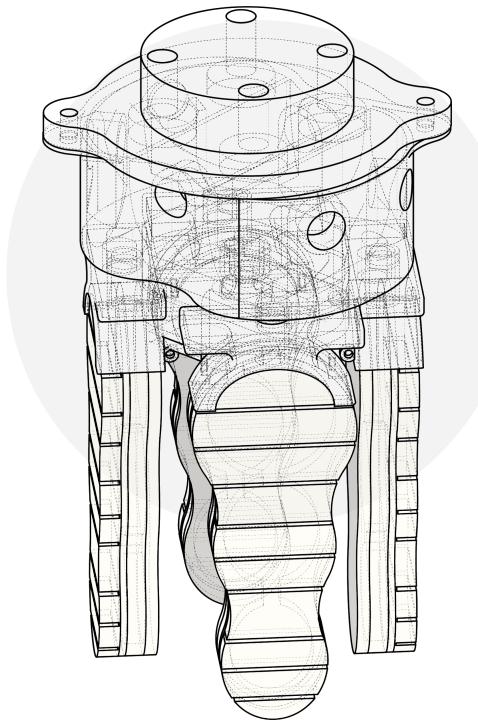
KRAKEGG

PROTOTYPE 4



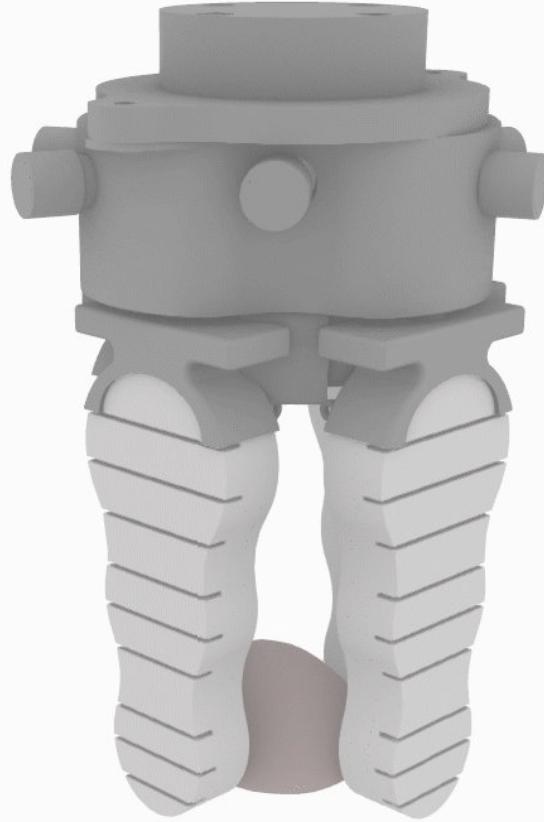
PROTOTYPE 03

FINAL END EFFECTOR



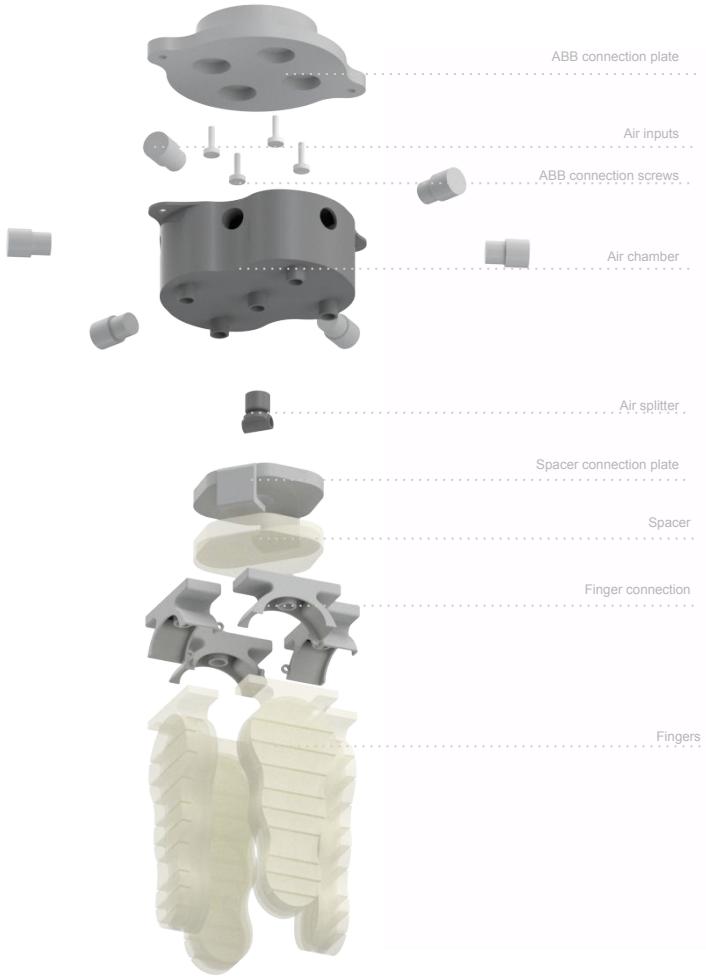
PROTOTYPE 03

CONCEPT



PROTOTYPE 03

ASSEMBLY



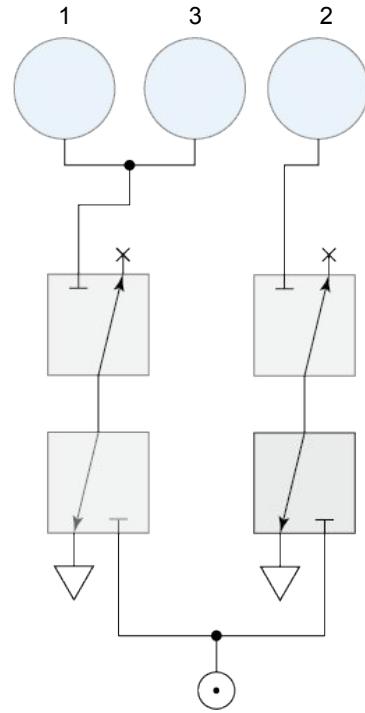
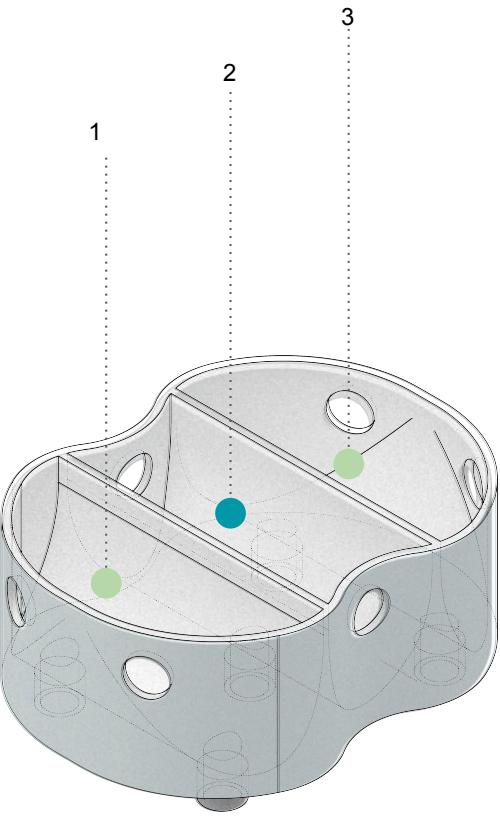
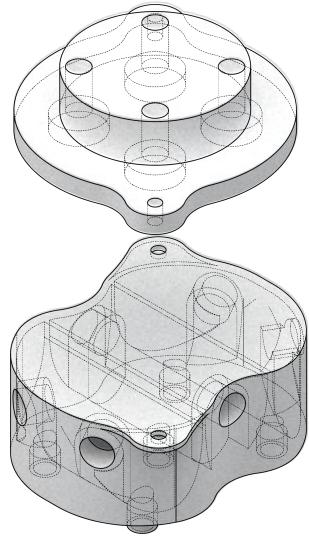
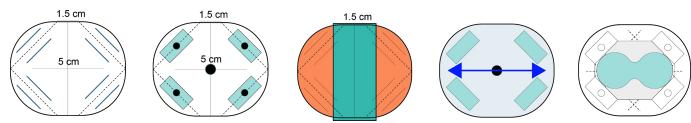
PROTOTYPE 03

FINGERS CASTING



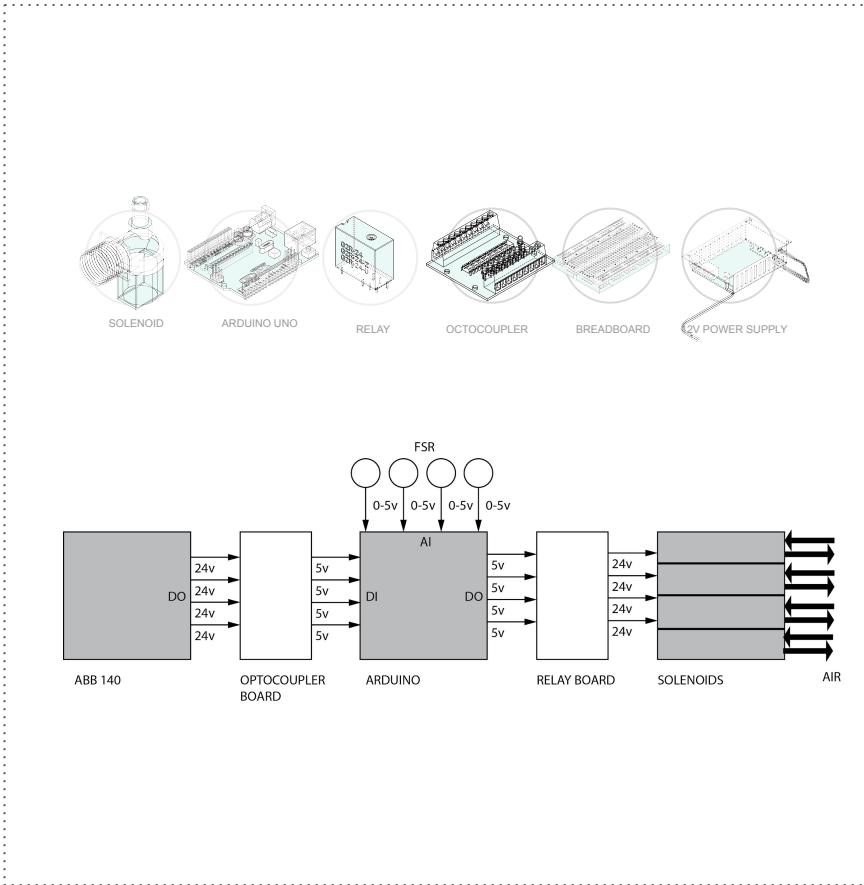
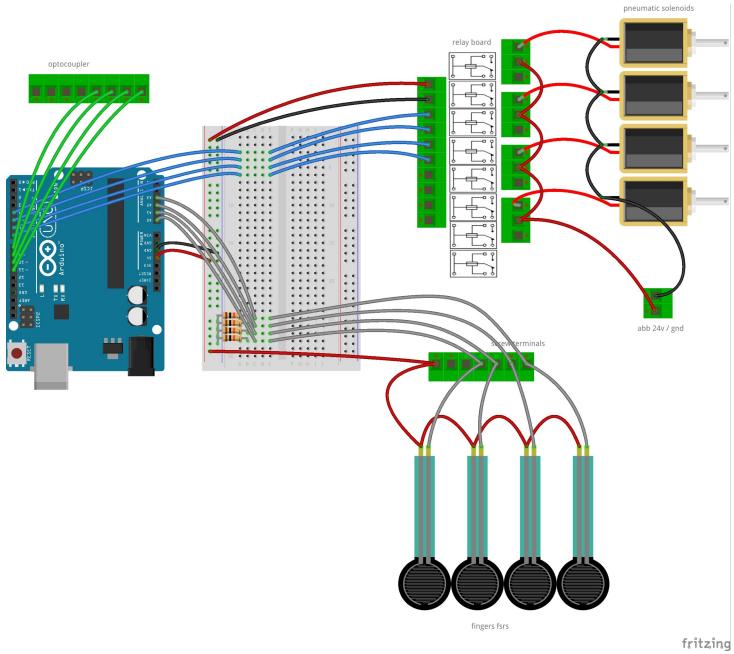
PROTOTYPE 03

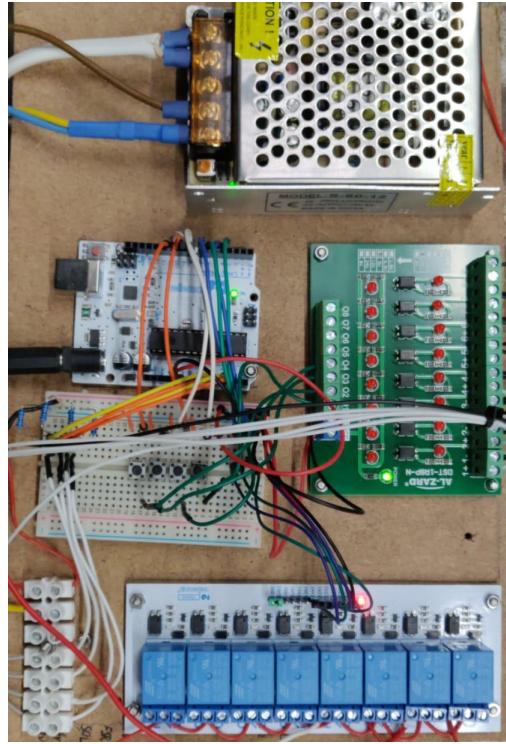
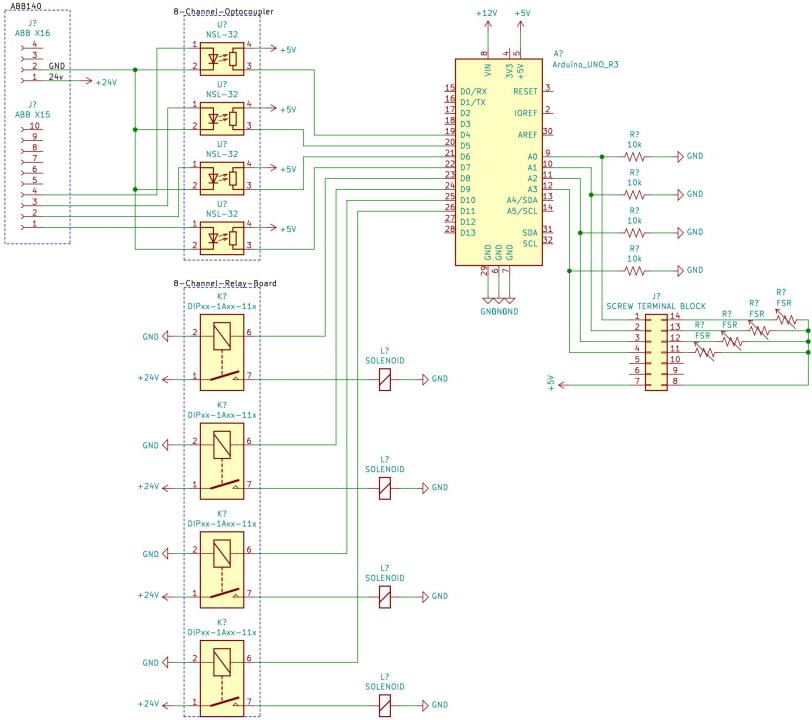
AIR CHAMBERS

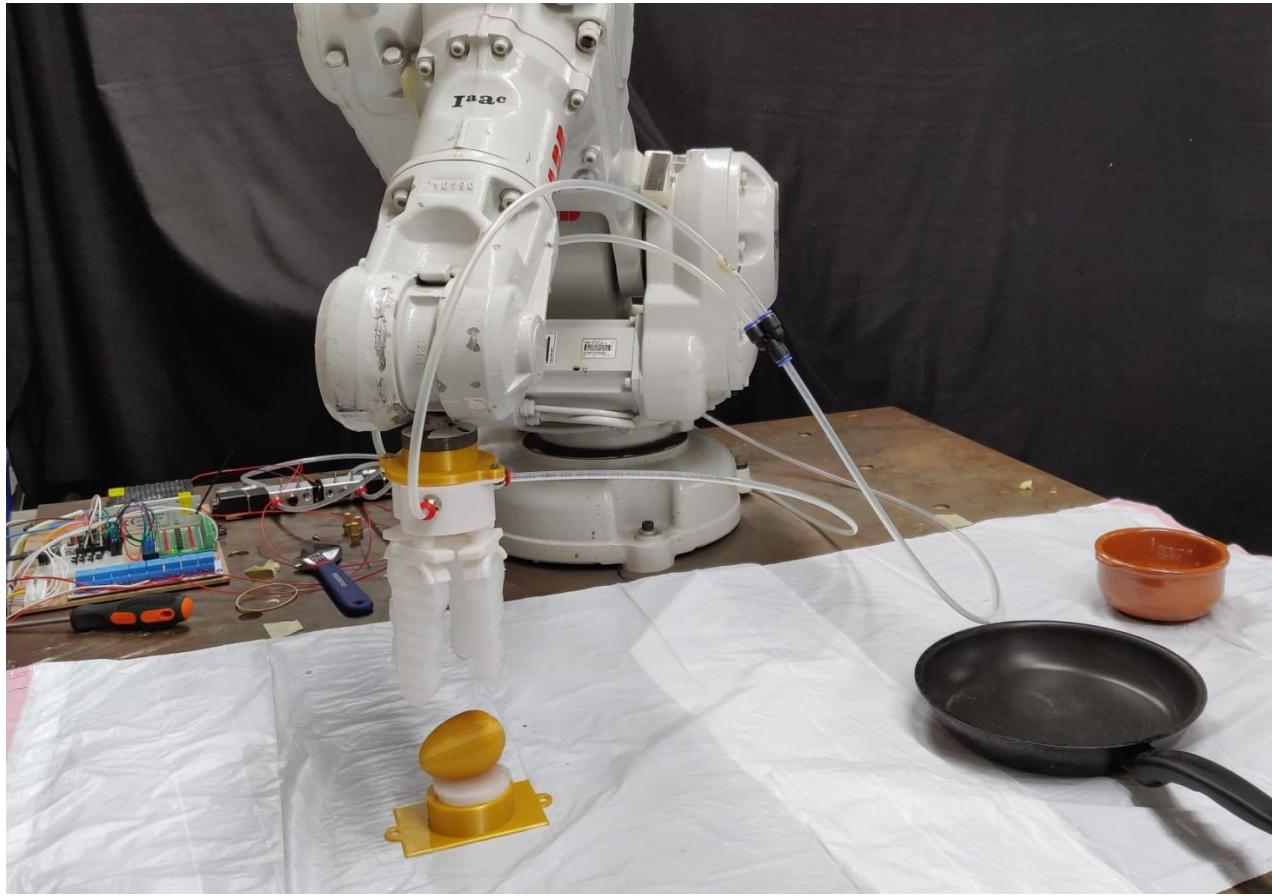


PROTOTYPE 03

ELECTRONICS







PROTOTYPE 03

SET-UP

