



Università  
di **Genova**

# Mechanical Design Methods

**First Assignment Report (Group 8)**

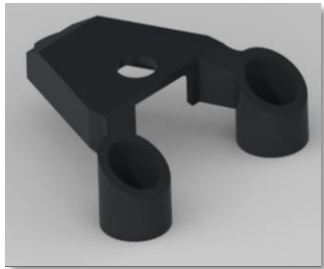
Students

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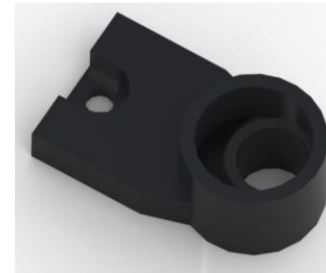
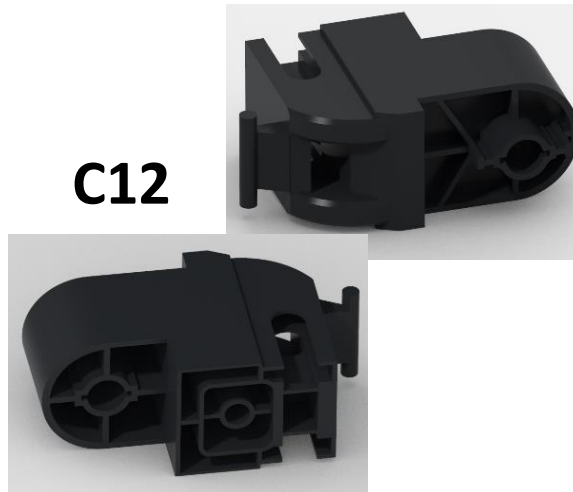
# 1/4 Part modeling

- Part measures detection
- Mechanical interfaces recognition (instruction manual reference)
- Modeling paradigms:
  - Lowest possible number of feature
  - Easy accessibility to measures related to mechanical interfaces
  - Model refinement to replicate real part fabrication



**C14**

**C12**



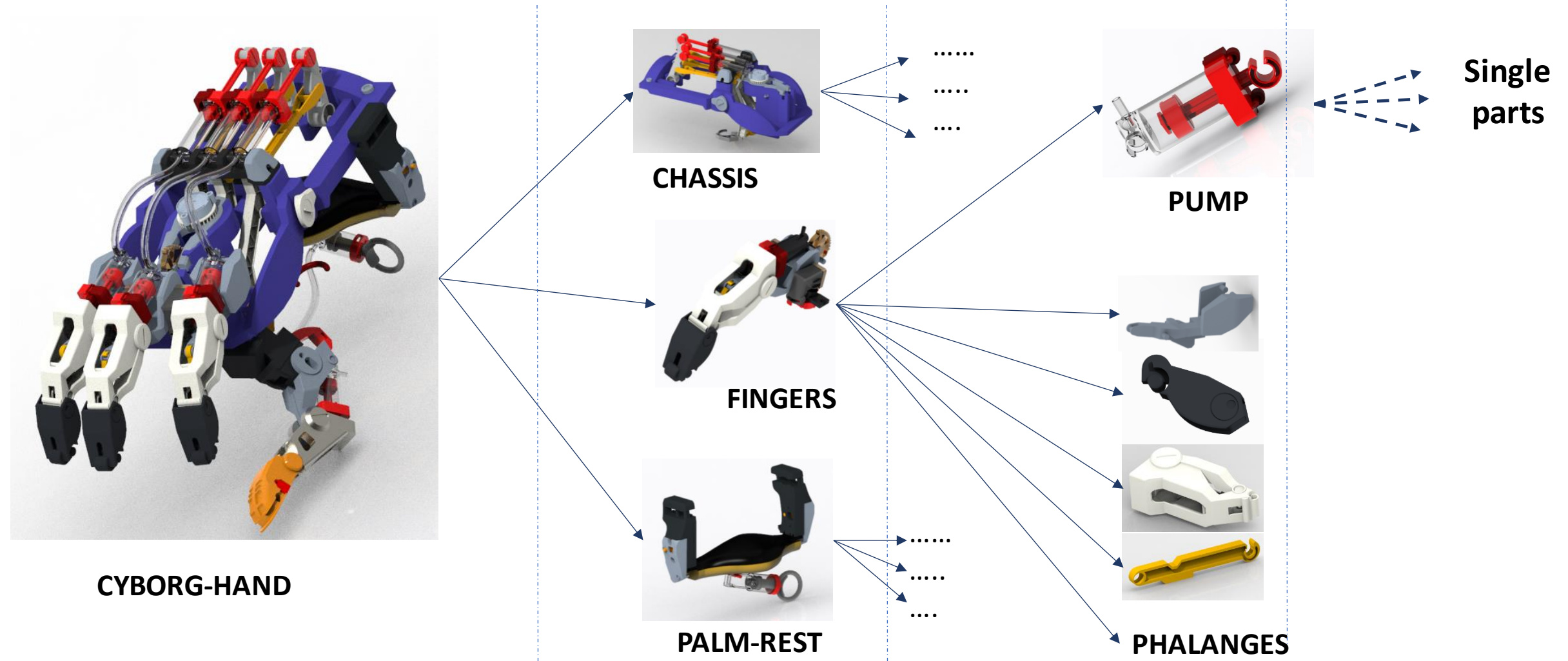
**C10**



**B2**

## 2/4 HAND Assembly Map

### 1. Top-down Approach : Assembly MAP (instruction manual reference)



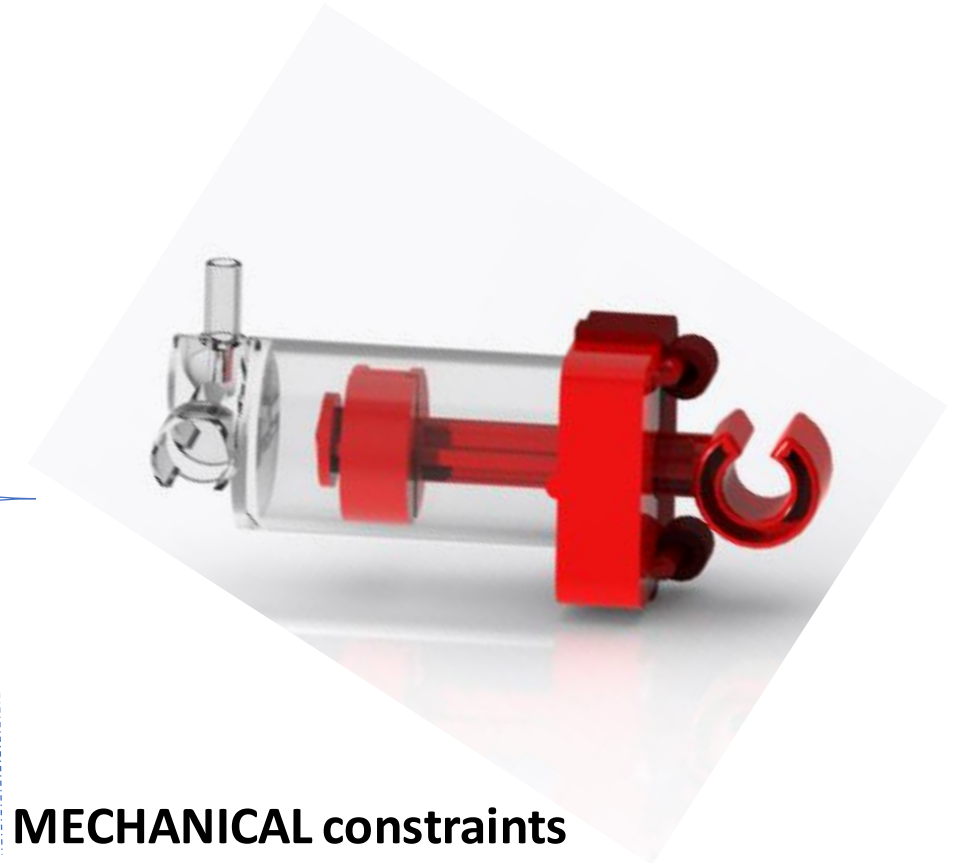
# 3/4 HAND Assembly building

## Bottom -UP Approach : sub-assemblies' construction

- Assembly of parts/sub-assemblies
- Definition of the constraints between parts/sub-assemblies



**RIGID constraints**



**MECHANICAL constraints**

## 4/4 Mechanisms

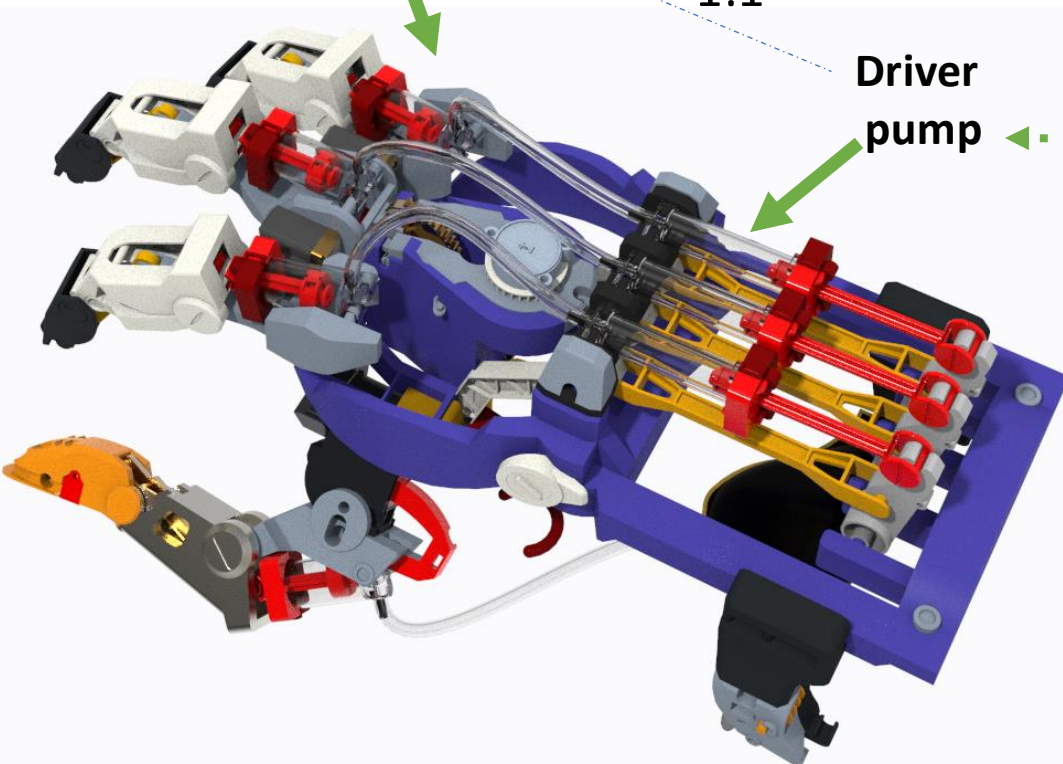
1. Measure of feasible range of finger PUMP displacement (avoiding finger singularities)
2. Set finger driver Pump (mounted on chassis) with same stroke
3. Gear connection between drive pump and finger pump
4. Run Motor Position analysis

Finger  
pump

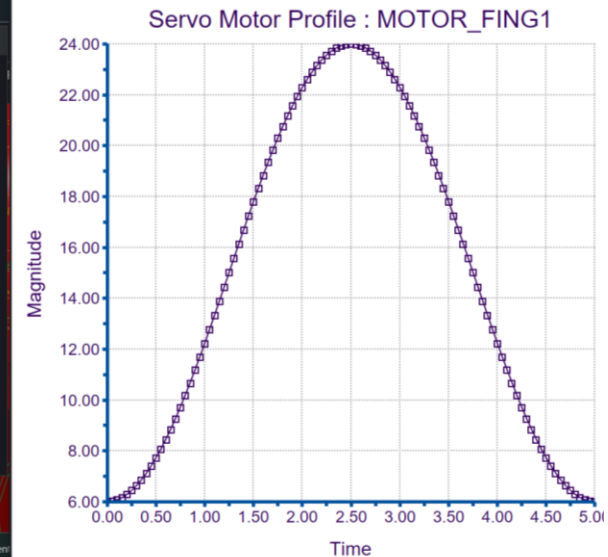
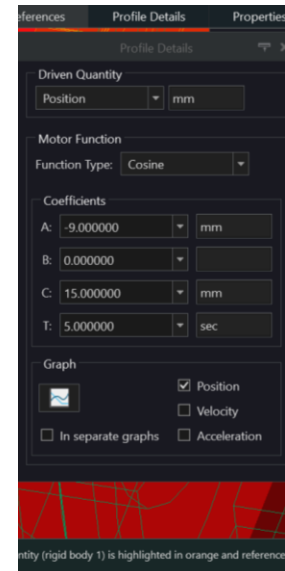


1:1

Driver  
pump



*Driver pump*  
**MOTORIZATION FUNCTION**



# Thank you for your attention

