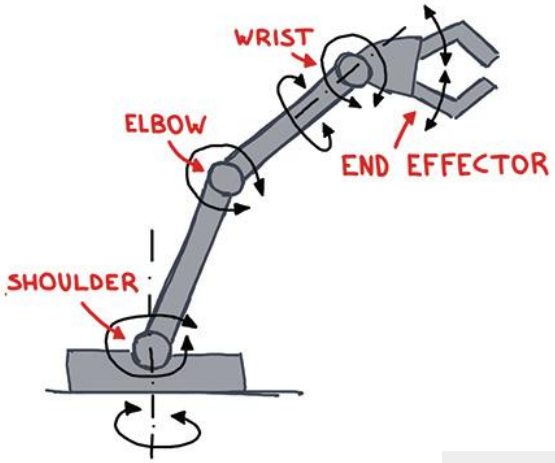
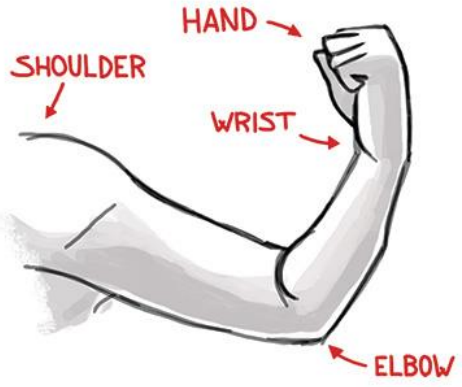
Design and 3D Printing

SmartMethodS
الأساليب الذكية





Arm & Joints Task 1

Names:
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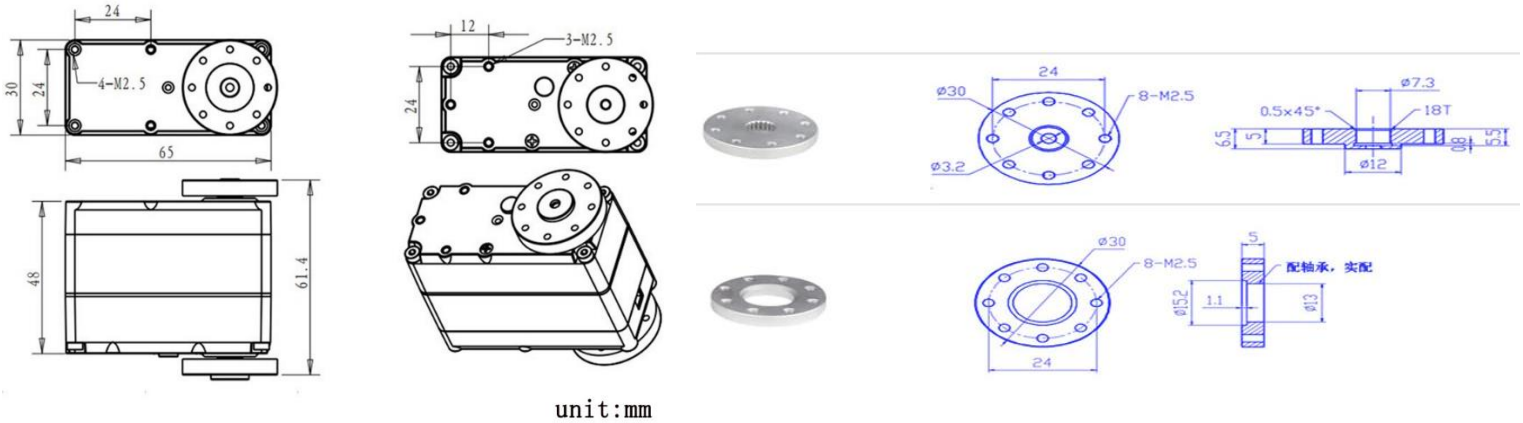
Abdulmalik Al-Mujalli

Supervisor:
Eng.Wessam Munshy

Motors Compare

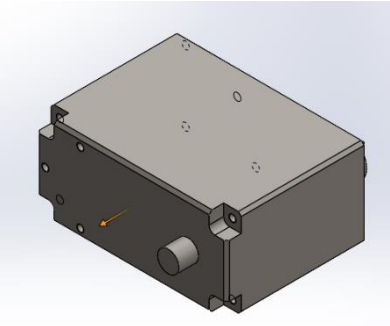
Name	LD-260mg	MG 995
Dimension	65*30*48mm	40*19*43mm
Weight	163 grams	69 grams
Rotation	180 Degrees	120 Degrees
Torque (Max)	70 kg.cm (8.4V)	15 kg.cm (6V)
Torque (Min)	58 kg.cm (6V)	13 kg.cm (4.8V)
Speed (Max)	0.13s/60º (8.4V)	0.13s/60º (6V)
Speed (Min)	0.17s/60º (6V)	0.17s/60º (4.8V)
Price	High	Low
Critical Difference	Has shaft & bearing	Only shaft
The Choice	✓	✗

Dimension Details of Motor

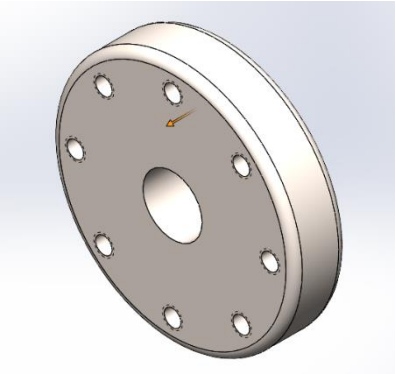


CAD Drawing – (LD-260mg Motor)

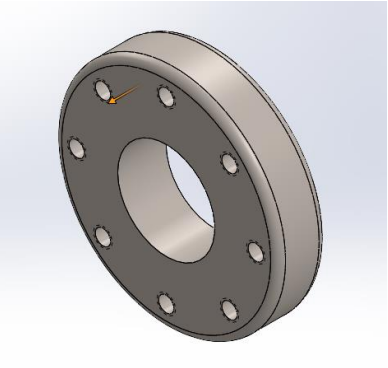
1- motor Body:



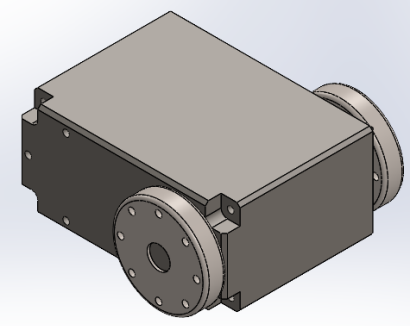
2- Main Shaft:



3- Bearing:

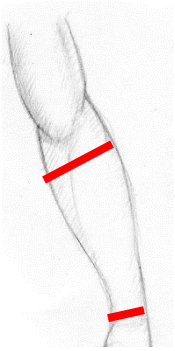


4- Assembly:

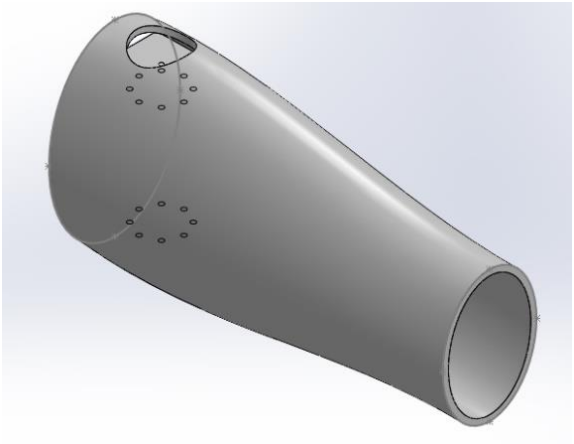


Forearm design

1- Fictional form



2- 1st CAD Drawing (SolidWorks)

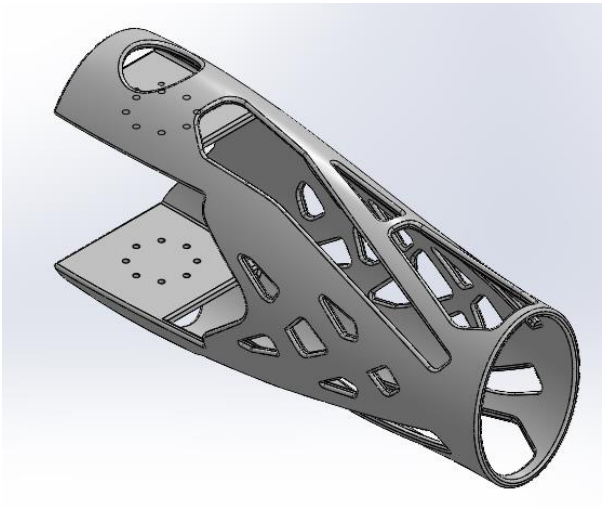


3-CAD Drawing with (Topology)

Topology: the study of geometrical properties and spatial relations unaffected by the continuous change of shape or size of figures.

Benefit of Topology: -

- **Reduce weight**
- **Reduce time to print**
- **Reduce cost**



References:

https://ar.banggood.com/LOBOT-LD-260MG-180-60KG-Large-Torque-Metal-Gear-Digital-Servo-For-RC-Robot-p-1516607.html?akmClientCountry=SA&&cur_warehouse=CN

https://ar.banggood.com/MG995-High-Torgue-Metal-Gear-Analog-Servo-for-RC-Airplane-Models-p-73885.html?rmmds=search&cur_warehouse=CN