

Bill of materials

Fabrication of a single manipulator

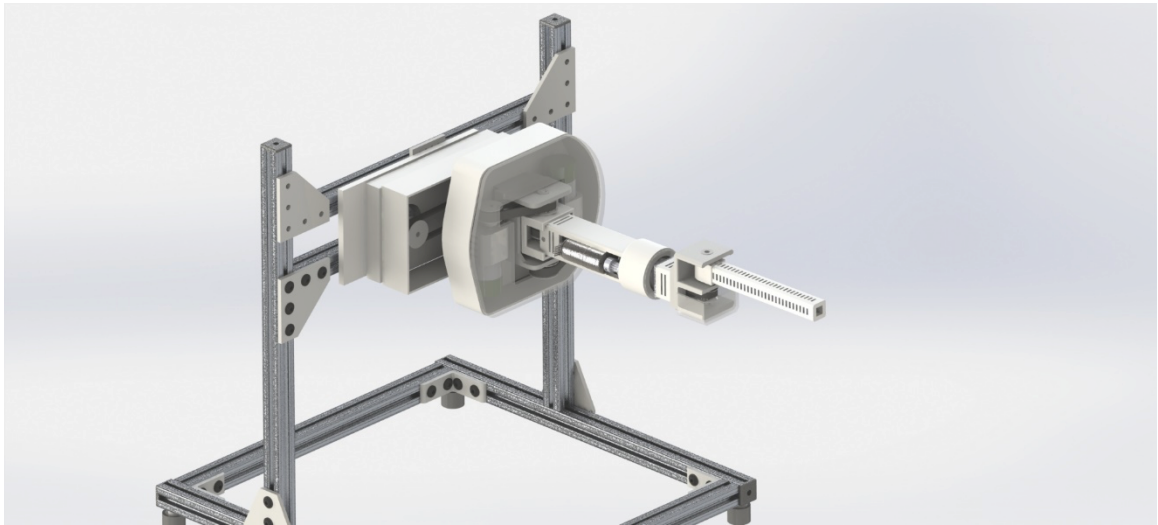


Figure 1. Tentative CAD drawing of the proposed manipulator

Placed orders:

For the base joint (with highest

<http://www.robotis.us/dynamixel-xm540-w150-r/>

Quantity: 1

Operating Voltage : 12V

Stall Torque : 7.3 Nm

No load speed : 53 RPM (318 deg/sec)

Operating modes : Torque control, Position control (0.088 deg resolution, 4096 counts),

Velocity Control

Weight: 162g

Communication: RS485

Maxon BLDC motor actuation

Cost ~ \$459

Required components:

<http://www.robotis.us/dynamixel-xm430-w210-r/>

Quantity: 3

Operating Voltage : 12V

Stall Torque : 3.0 Nm (Linear interpolation for continuous speeds)

No load speed : 77 RPM (362 deg/sec)

Operating modes : Torque control, Position control (0.088 deg resolution, 4096 counts),

Velocity Control

Weight: 82g

Communication: RS485

BLDC motor actuation (not Maxon)

Cost ~ \$239 x 3

Miscellaneous:

Robot Cable-4P 100mm 10pcs

Cost ~ \$13

3D printer material (PLA, approx. 3 reels)

Cost ~ \$20 x 3

Miscellaneous build materials

e.g.: shaft rods, bearings, and screws

Cost ~ \$50

Wrist linear motor:

Cost ~ \$20

Gripper: Not included (should discuss about it)