Single fork design for mixed palatizing applications.

Concept design

Pushes the box toward the fork so that the box won't topk over the single fork.

Connector to the arm is tilted so that the end effector won't he obstructed by the arm.

air piston

Sliding fork to support the box during manipulation
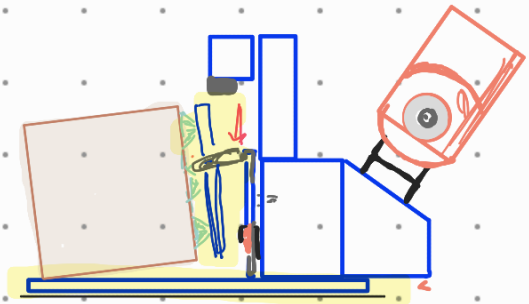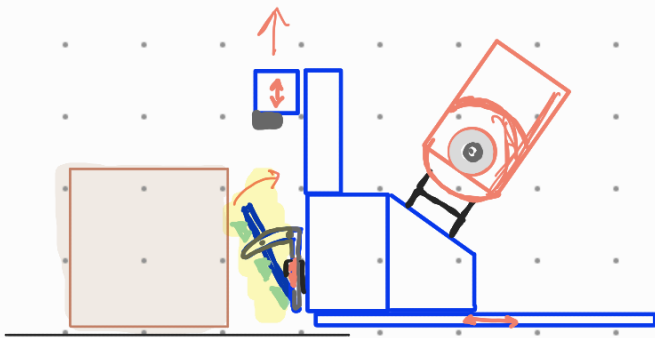
suck to the box and pushes it up so that the fork can he inserted.

box holder.

push to fork

Box

Tot sensors

air piston at the back of the suction plate

suction plate

fork
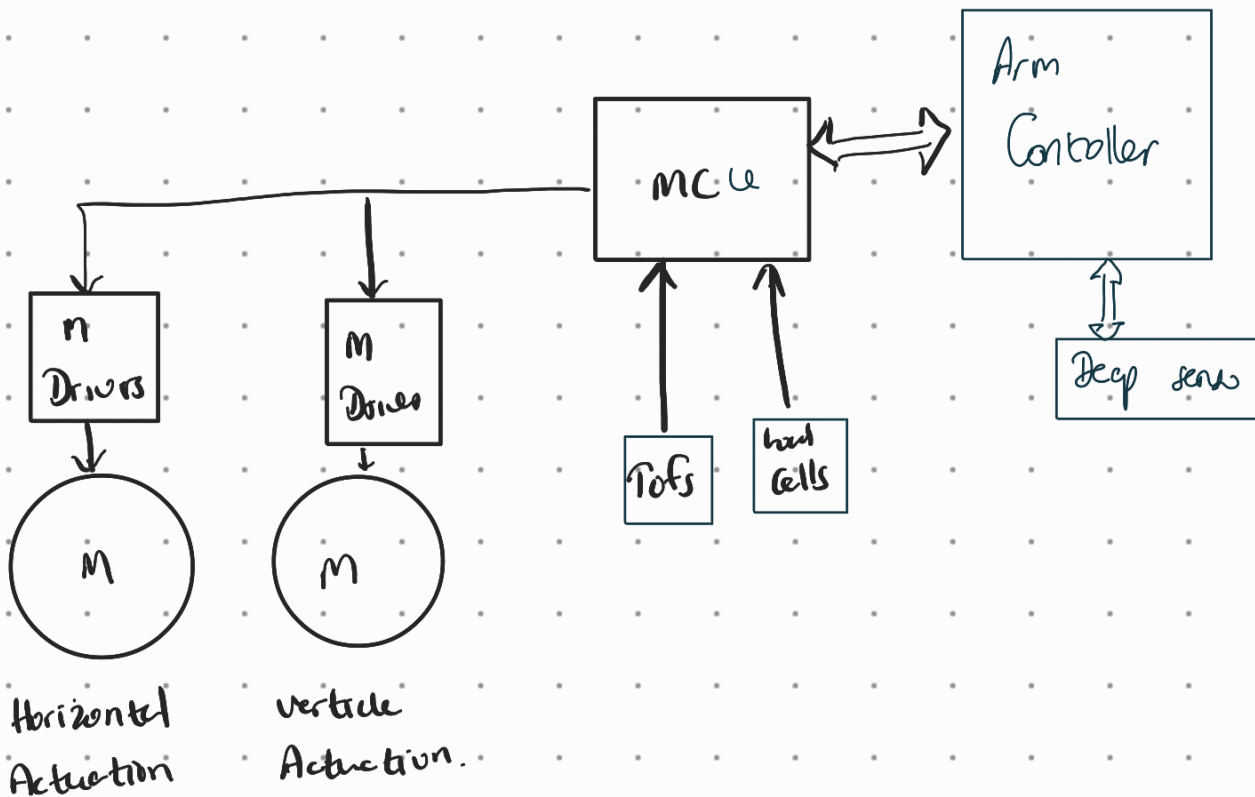
Supported on 1 fork

Box handling procedure

Aligning to the box
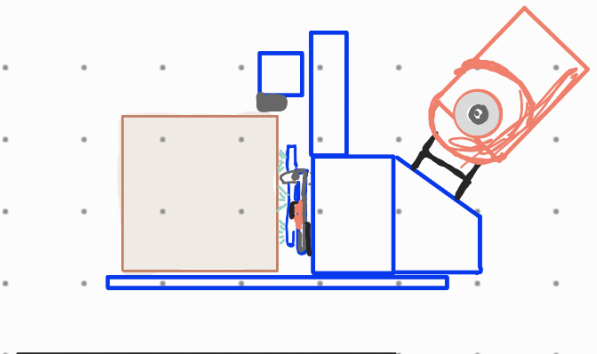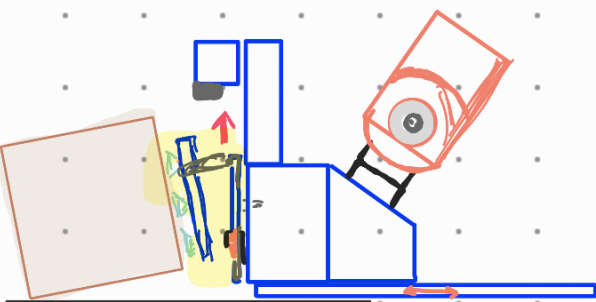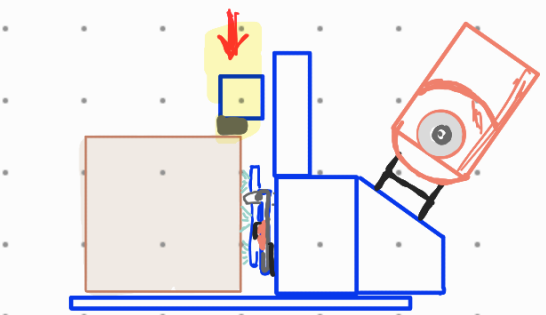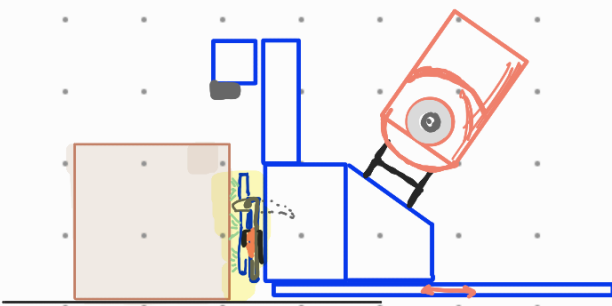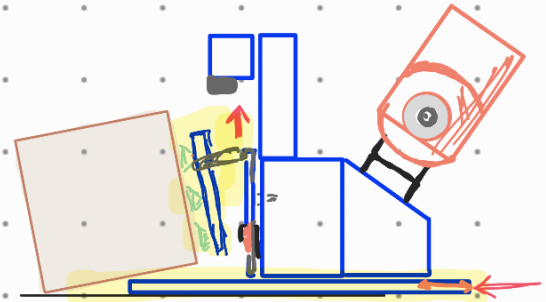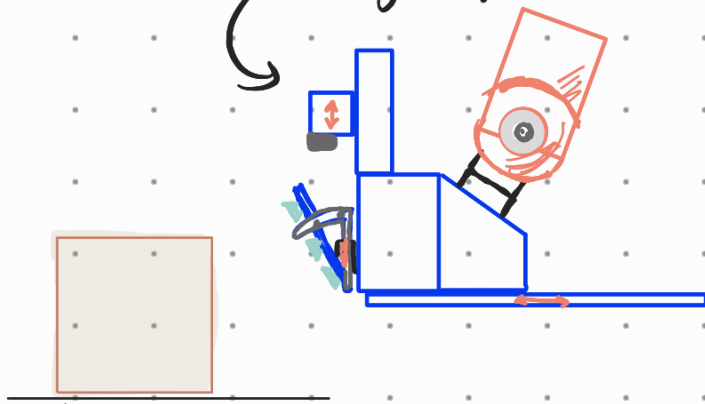
2 stepper motors
6 TOf sensors design.
Pneumatic piston
Pneumatic suckers.

Load cells

TOFs ⟶ Measure the relative orientation of the box respect to the manipulator.

Load cell ⟶ Determine the weight and the centre of mass.