

Meiosis



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Purpose

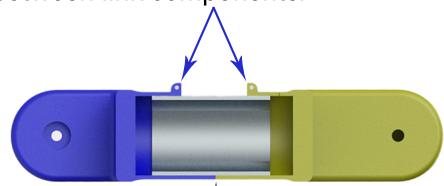
The Manipulator for Educational Institutions with Open Source Integrated Systems (MEIOSIS) aims to increase the accessibility of robotics education to high school students and hobbyists.

Design Details

- 6 degree of freedom, revolute joint manipulator
- Differential shoulder and wrist joints
- Open-source software and CAD files, available to be modified by the end-user

Link Features

The links feature a unique clamping system, used to guarantee a tight hold between link components.



Since machined aluminum tubing is used in the design of the manipulator, the links utilize an alignment method that ensures the proper link lengths regardless of the length of the tube.

Differential Gearboxes 101

The differential gearboxes in the shoulder and the wrist of the manipulator enable two motors to share the loads of two independent degrees of freedom. This decreases both the torques applied to the servos and the size of the joints.

Shoulder
Differential
Gearbox

