Kinematic Diagram

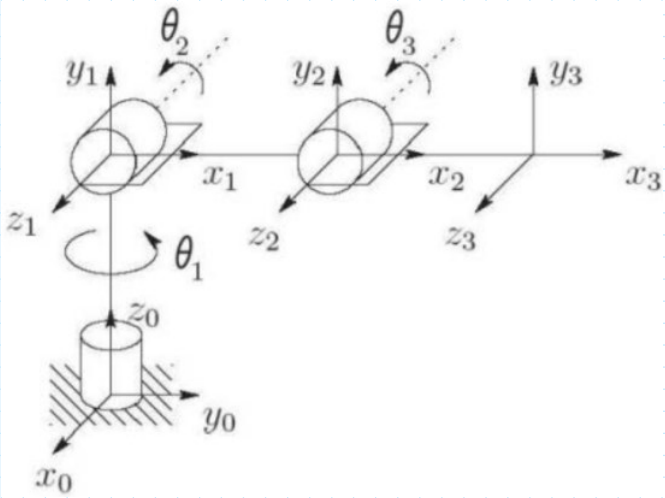
Saturday, 20 September 2025 8:18 am

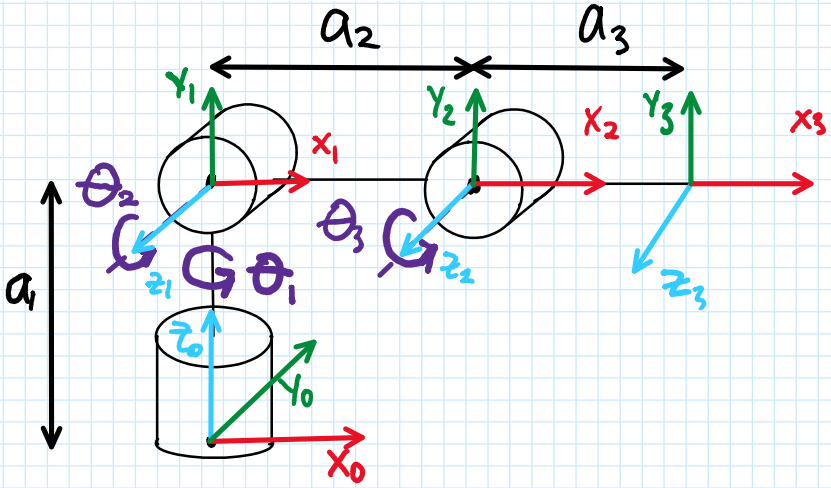
Kinematics

The science of motion that treats the subject without regard to the forces that cause it.

Kinematic Diagram

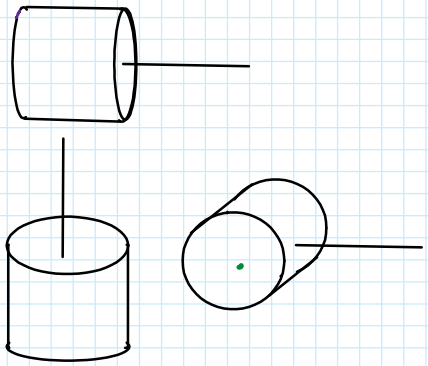
Diagram that shows how the links and joints are connected together when all of the joint variables have a value of 0.



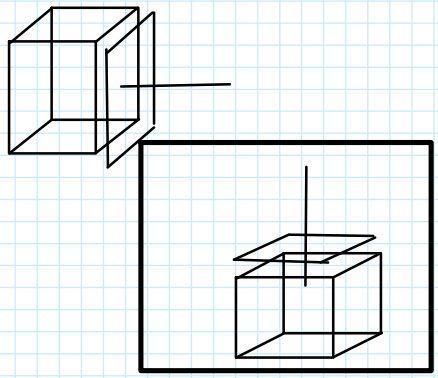


Joint Diagrams

Twisting or Revolute Joints, θ_n



Prismatic Linear or Orthogonal Joints, d_n



Basic Components and Labels

Links, a_n - *these are the rigid parts of the mechanical manipulator, joints are also considered links and the values are constant*

- *if revolute/twisting, links are drawn from the center of rotation*
- *If prismatic, either linear or orthogonal, links are drawn from the center of translation*
- *If from base, links are drawn from the center of gravity*

Joint Variables, θ_n & d_n - *these are values that change when the joint moves*

θ_n → unit: deg(°) or radian (rad)
→ revolute
→ (+) (−)

d_n → unit: unit of length
→ prismatic