

Objective

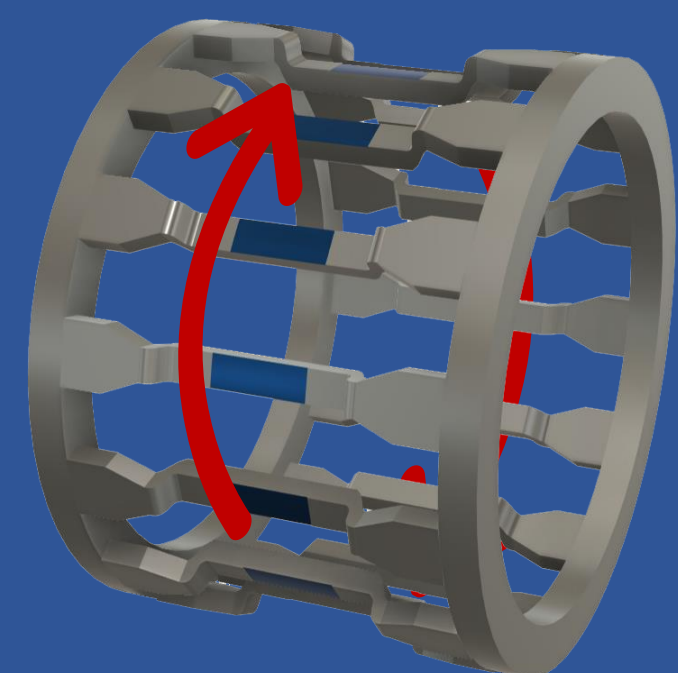
The objective of this project was to automate the process of painting needle roller bearing retainers.

Background

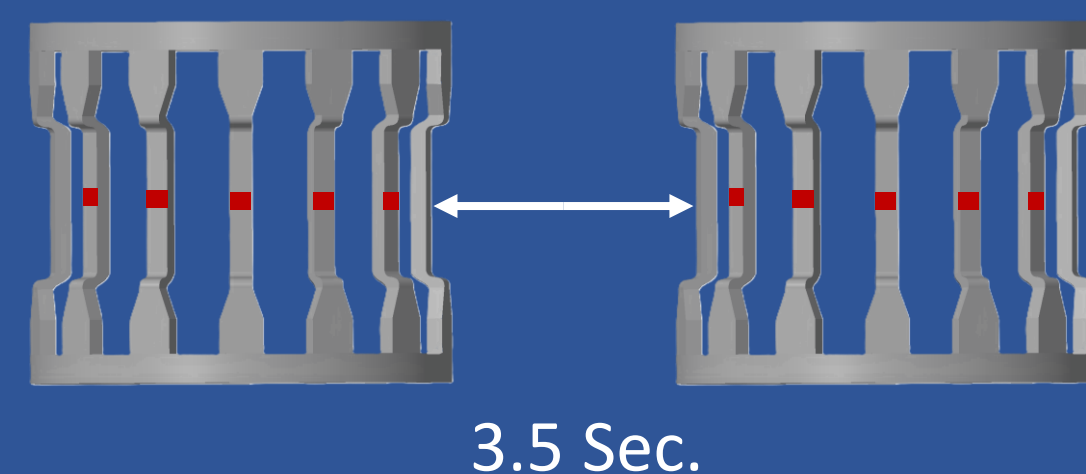
JTEKT uses paint marks on bearings so that customers can identify the type of bearing. JTEKT currently hand paints the bearings, so this device will reduce the man hours allocated towards painting.

Key Targets

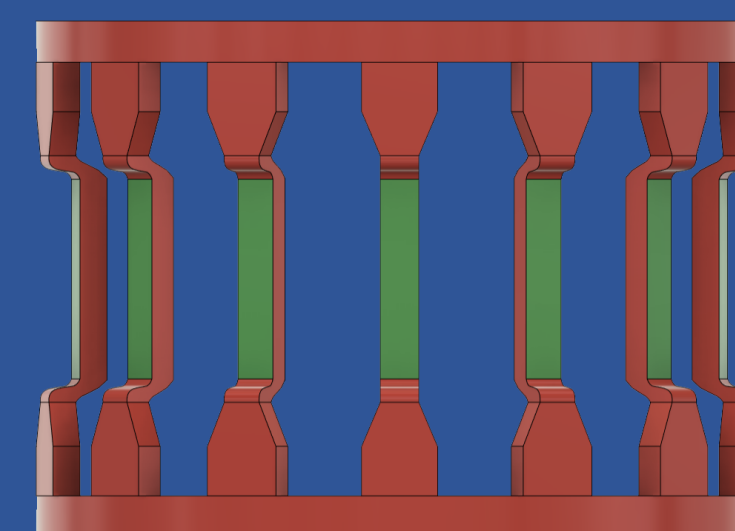
Paint 360° of retainer



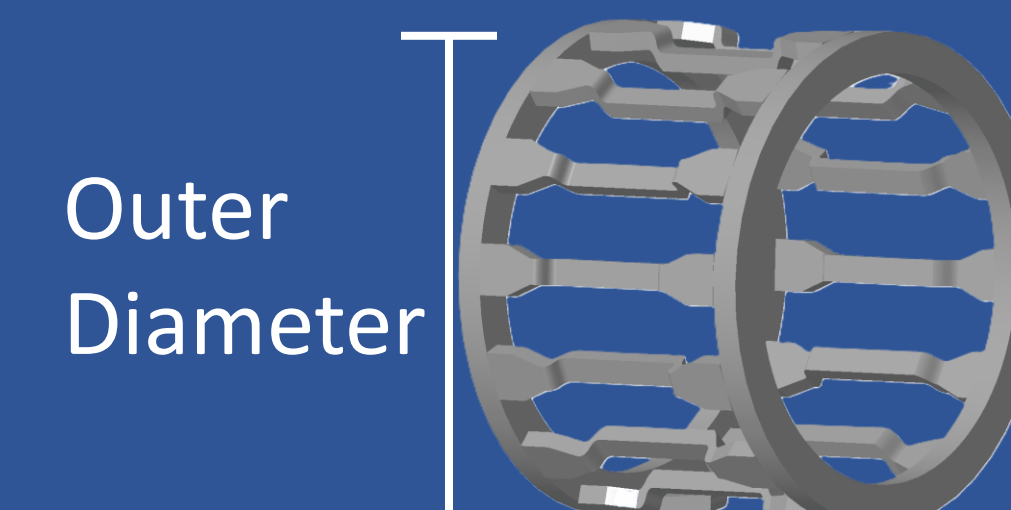
3.5 seconds cycle time



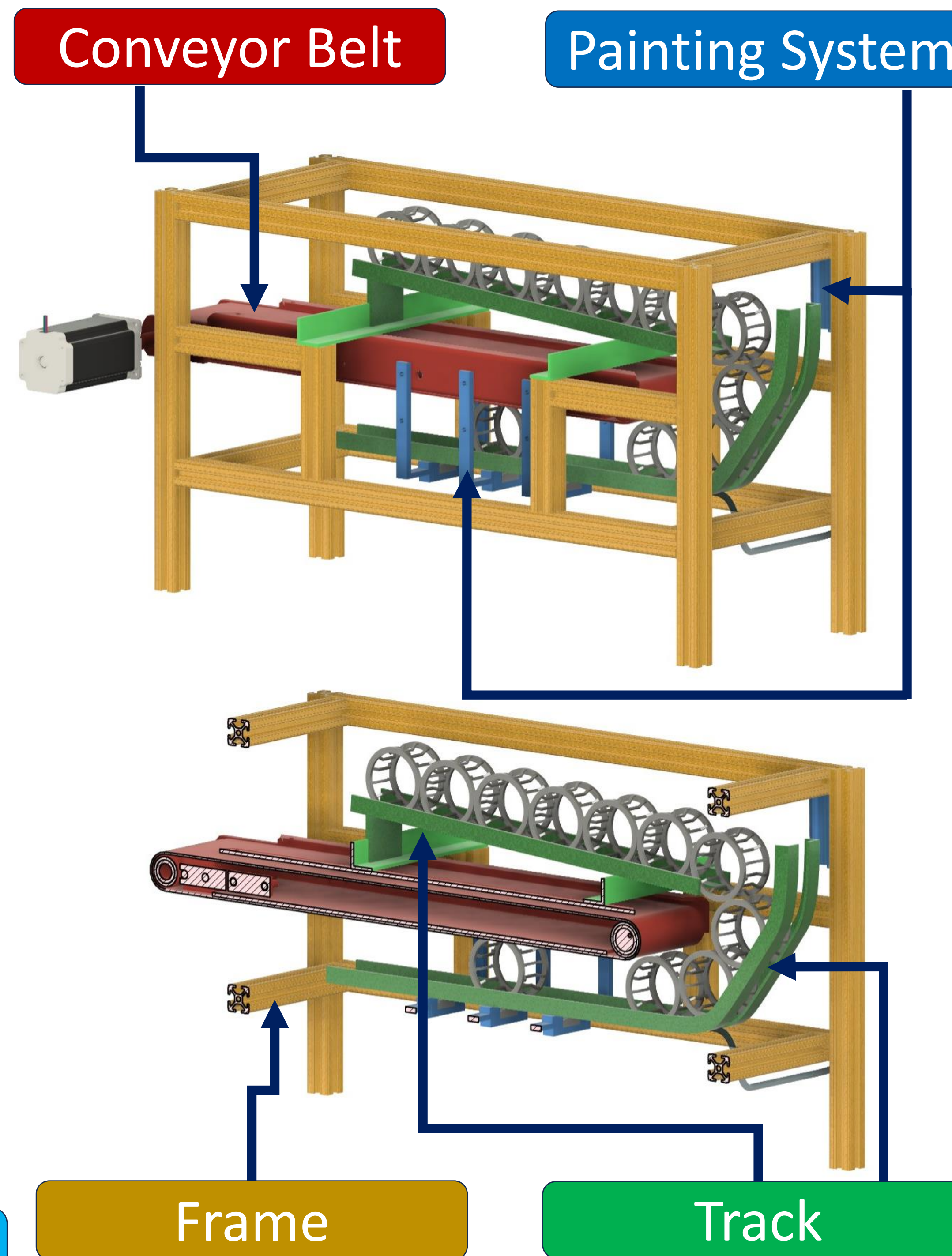
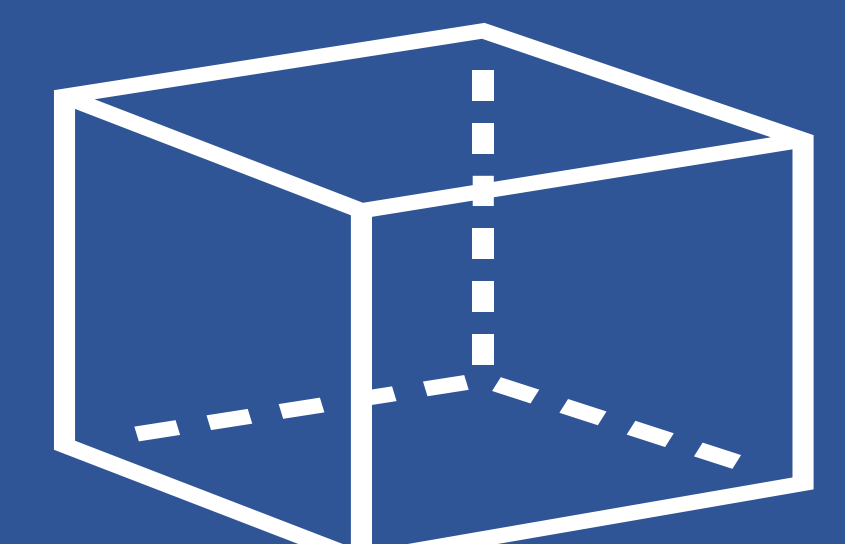
Limit Extraneous paint on working surface to 1 mm²



Retainer diameters from 7/8 to 2 1/2 inches



Fit in fume hood 18in x 41in x 24in



Challenges

- Ability to adjust device for different size bearings
- Painting a consistent and accurate stripe
- Smooth Input & Output

Outcomes

- Minimal overpaint (<1mm²)
- ~3 second cycle time
- Highly adjustable painting radius
- Minimized fume risk