

# ME462 MECHATRONIC DESIGN

## Mini Robot Documentation

Version 1.0



MECHANICAL DOCUMENTATION

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# 1 Introduction

This document provides a comprehensive guide for the assembly and implementation of the minibot designed for educational purposes.

## 2 Component List

The following components are included in the mechanical design:

- Battery Holders
- Motor Holders
- Wheel (with or without magnets)
- Caster Wheel
- Camera Holder

## 3 Print Instructions

### 3.1 Battery Holders

- Two printouts of this part need to be taken: the part itself and the mirror symmetry.
- This part has internal M3 nuts for mounting.
- The printing process must be paused, then these nuts must be added to part. After that printing process can be resumed. In this way, the embedded nuts can be reached.

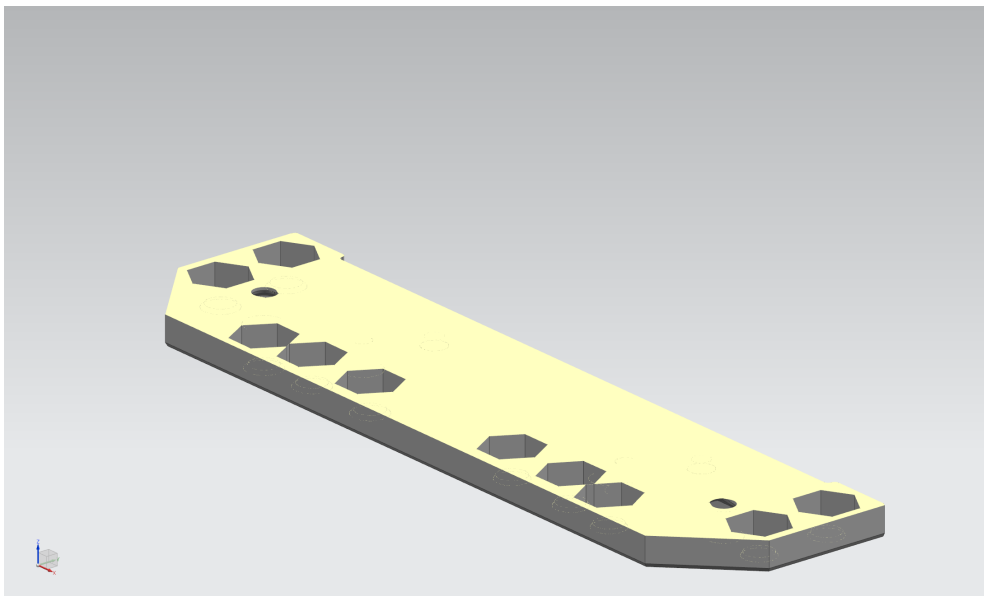


Figure 1: First Pause Layer

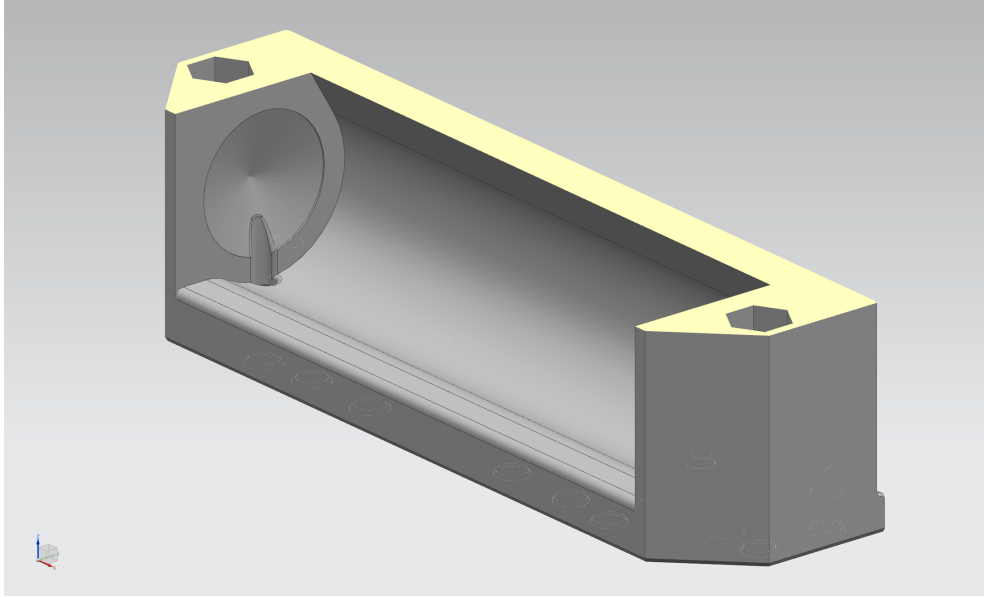


Figure 2: Second Pause Layer

### 3.2 Wheels

- If magnets will be used in the wheel (for encoder), printing process should be paused to insert the magnets:
- If wheel is used without magnet internal support should be added to part while printing it.

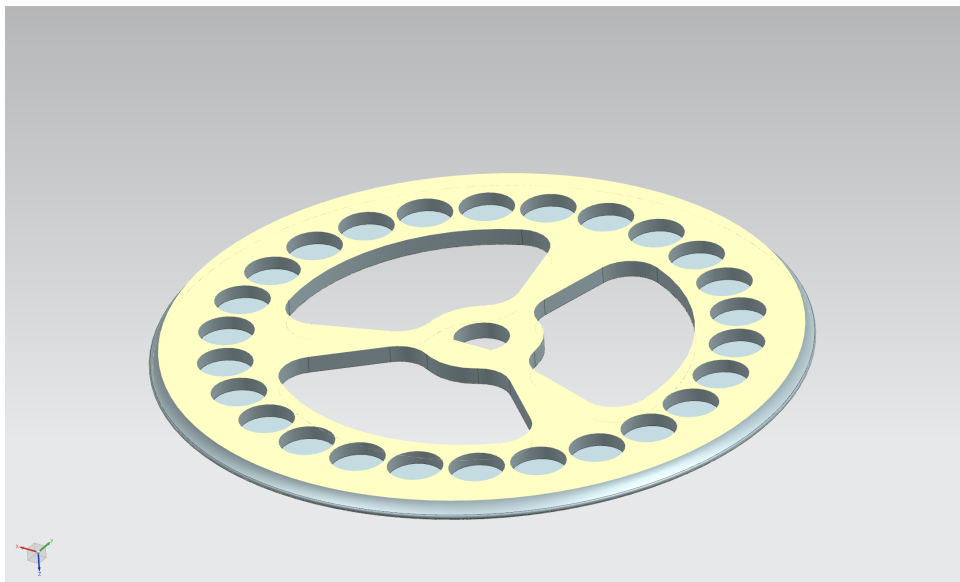


Figure 3: Wheel Pause Layer

### 3.3 Motor Holders

- Two printouts of this part need to be taken: the part itself and the mirror symmetry.
- Supports should be enabled.

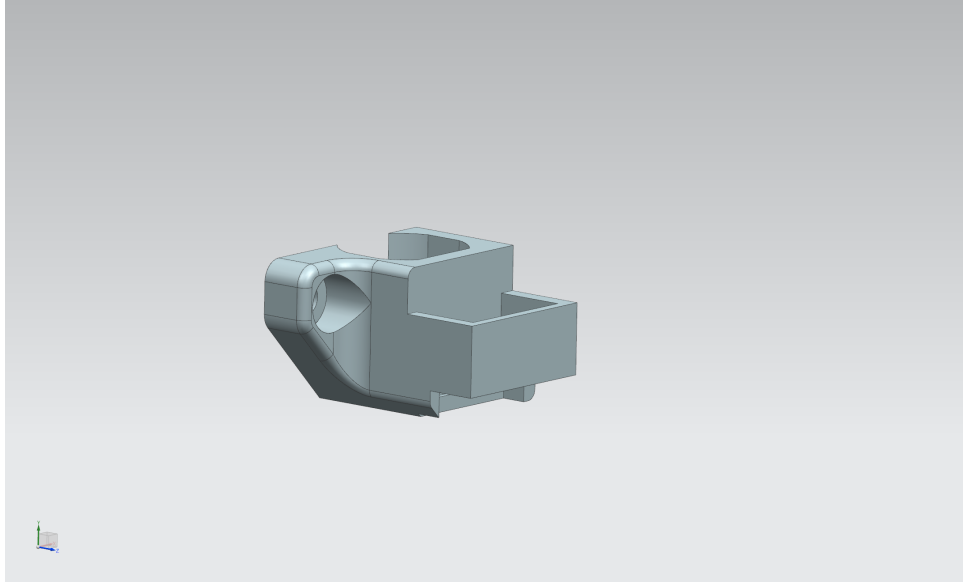


Figure 4: Print orientation

### 3.4 Camera Holder

- This part has internal M3 nuts for mounting.
- The printing process must be paused, then these nuts must be added to part. After that printing process can be resumed. In this way, the embedded nuts can be reached.

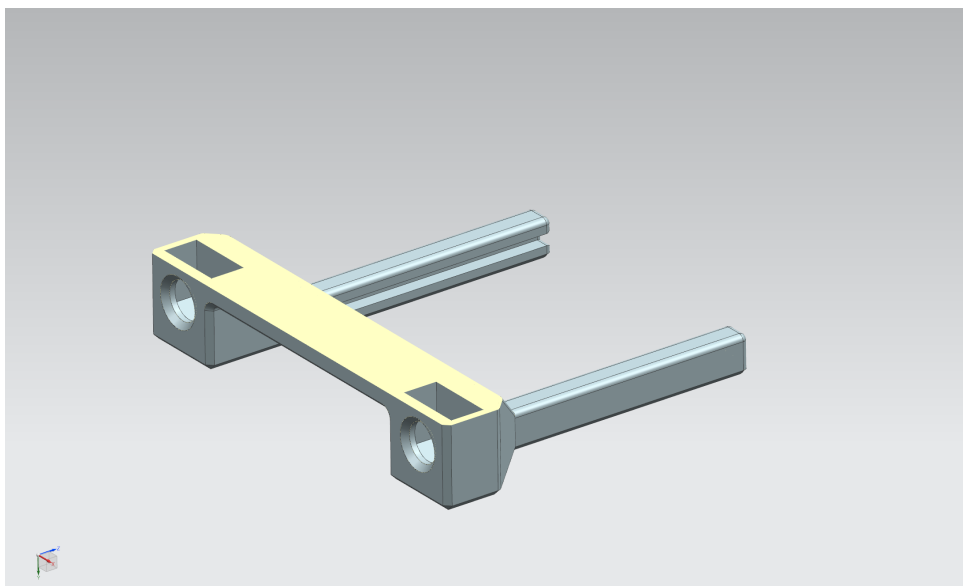


Figure 5: Pause Layer