



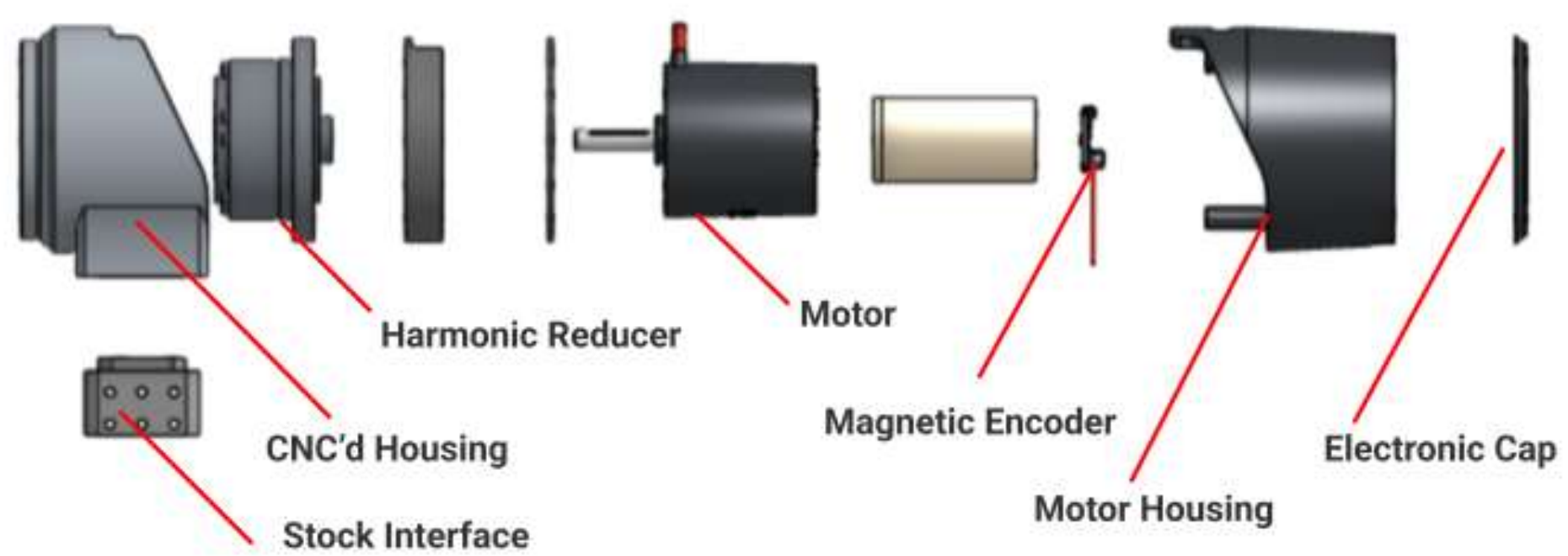
Elbow



The elbow is a **compact motor module developed as an MVP for Arm 3.0’s modular joint architecture**. It uses a **NEO 1.1 brushless motor** and **Harmonic Drive 71-100-118879-11 reducer**, delivering **110 Nm rated torque**, controlled by an **ODrive motor controller**. The **housing and structural components were machined from 6061 aluminum**, validating machining workflows, tolerances, and assembly interfaces.

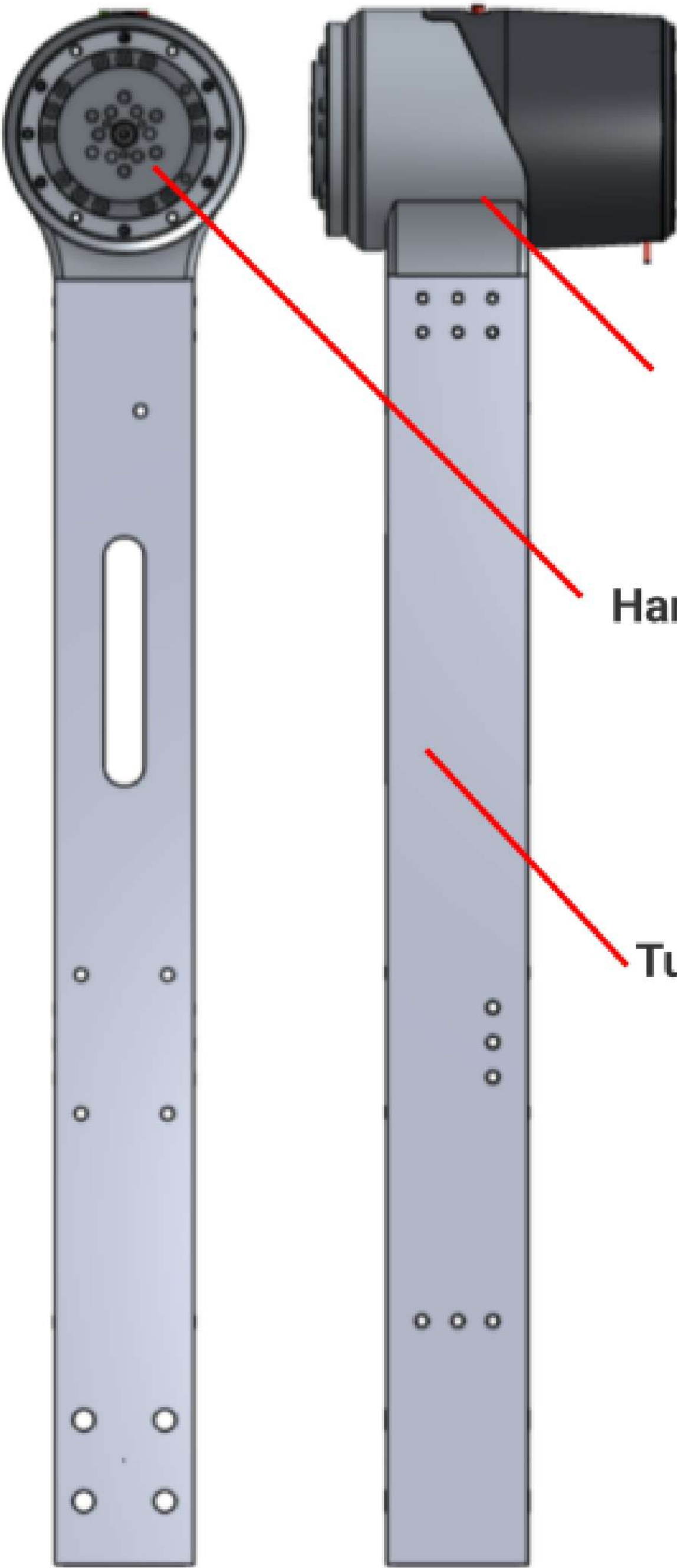
This module was developed as part of the **Master Validation Plan for Arm 3.0**, serving as a **test platform to evaluate manufacturing cost, assembly complexity, and real-world performance of a single integrated motor module** before committing to contract manufacturing. This validation effort enabled early resolution of **tolerance, integration, and manufacturability issues**, reducing technical and financial risk and establishing a **scalable foundation for full modular arm deployment**.

Motor Module for ARM 2.0





ELBOW

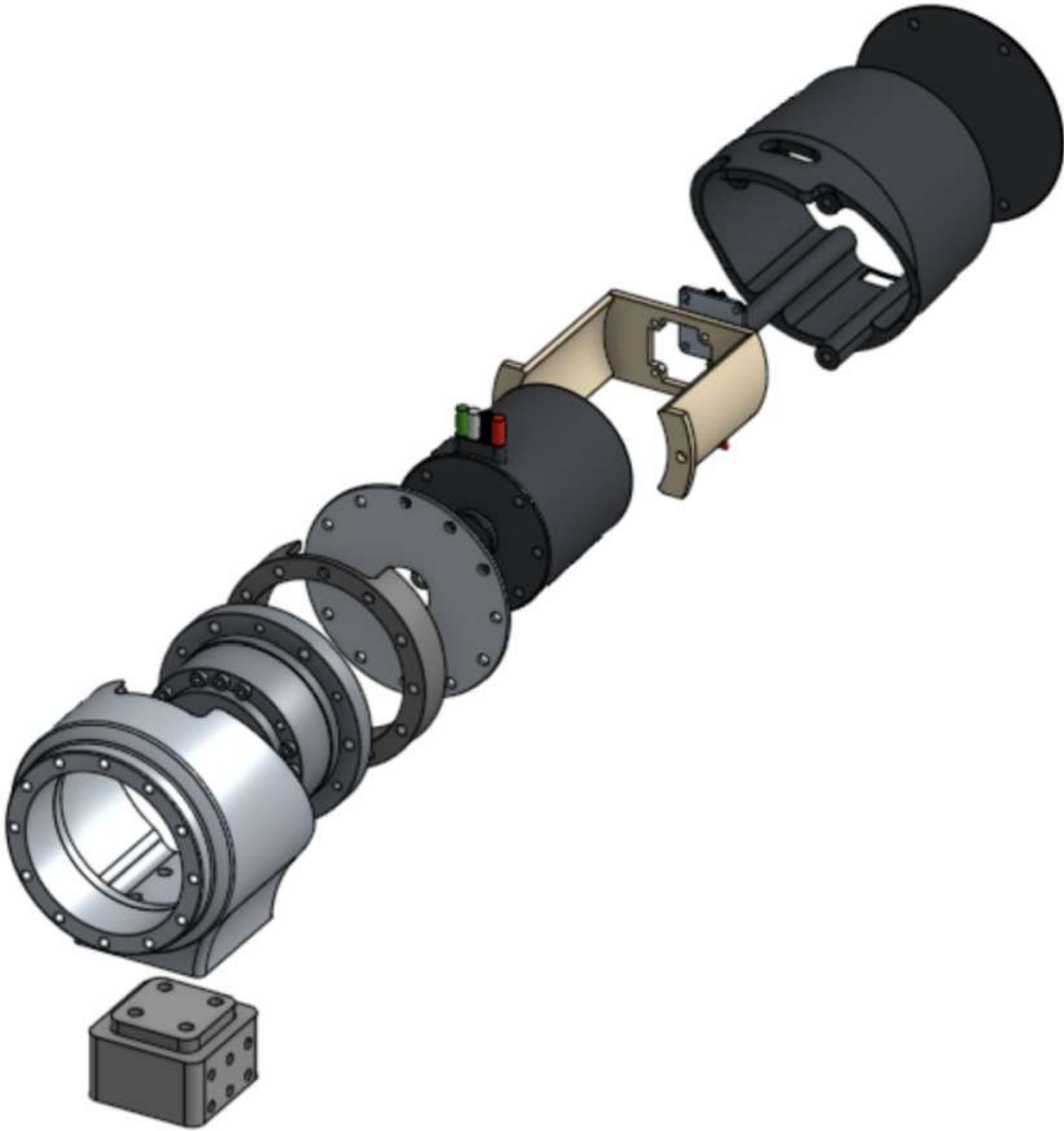
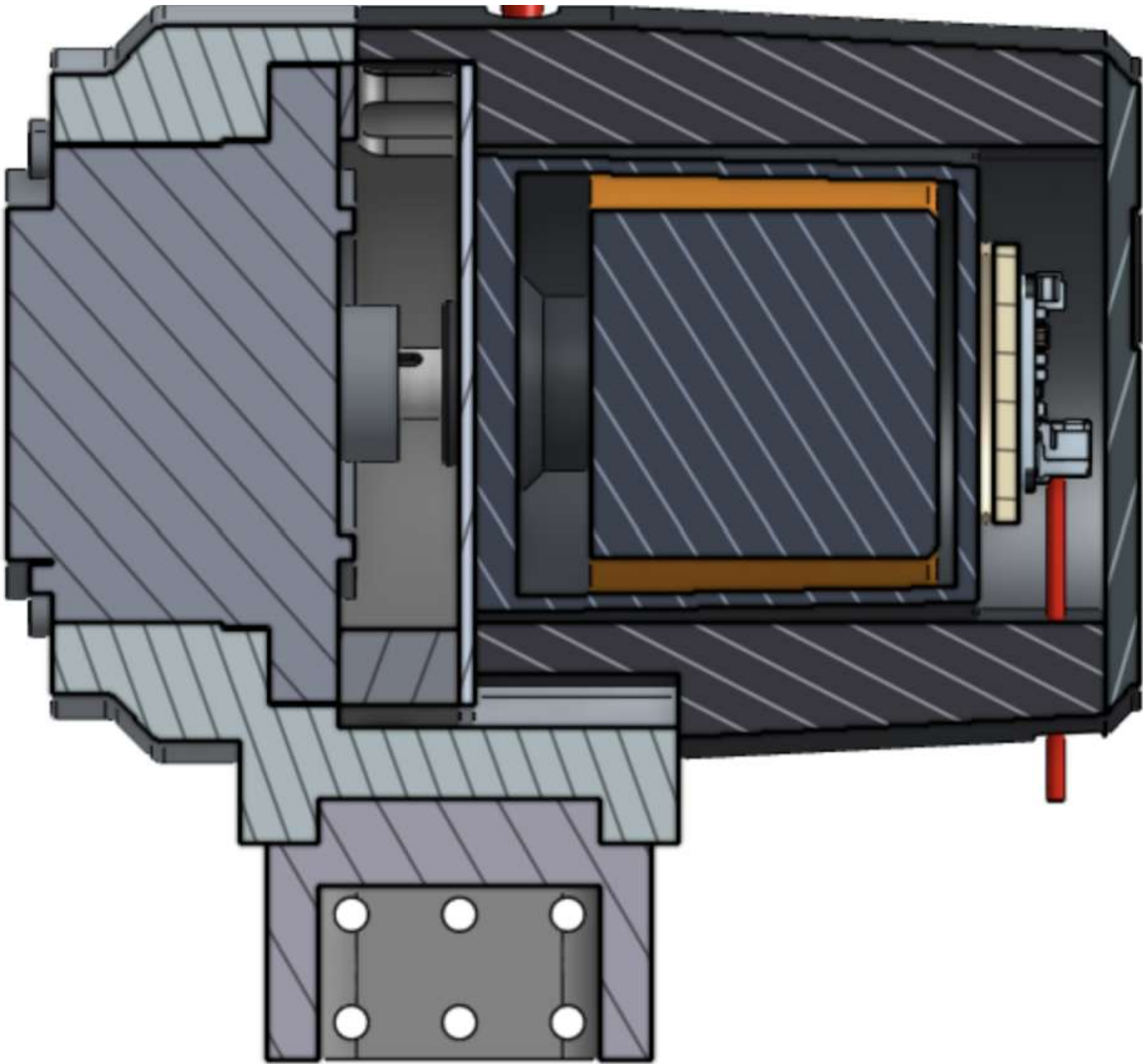


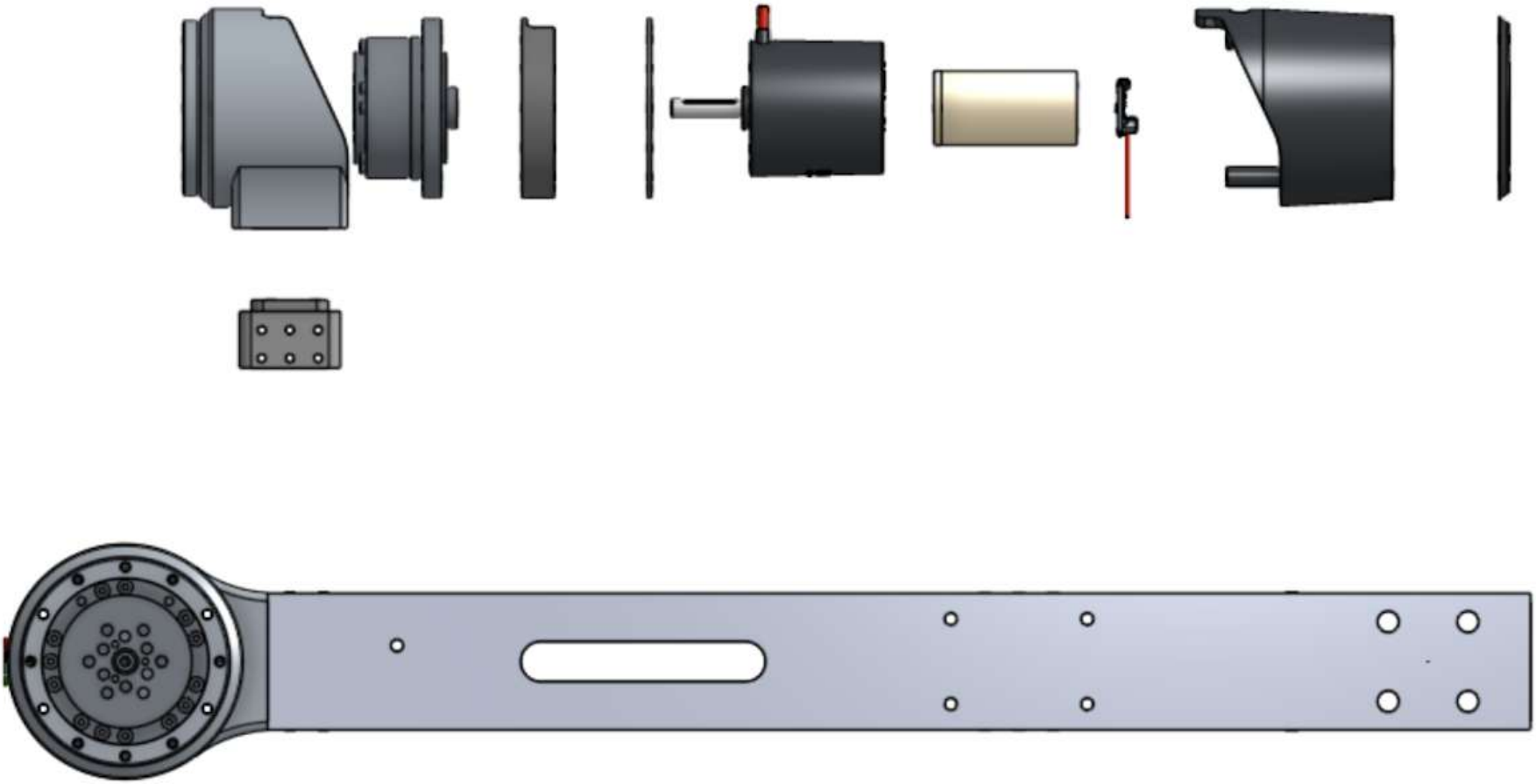
CNC'd Housing

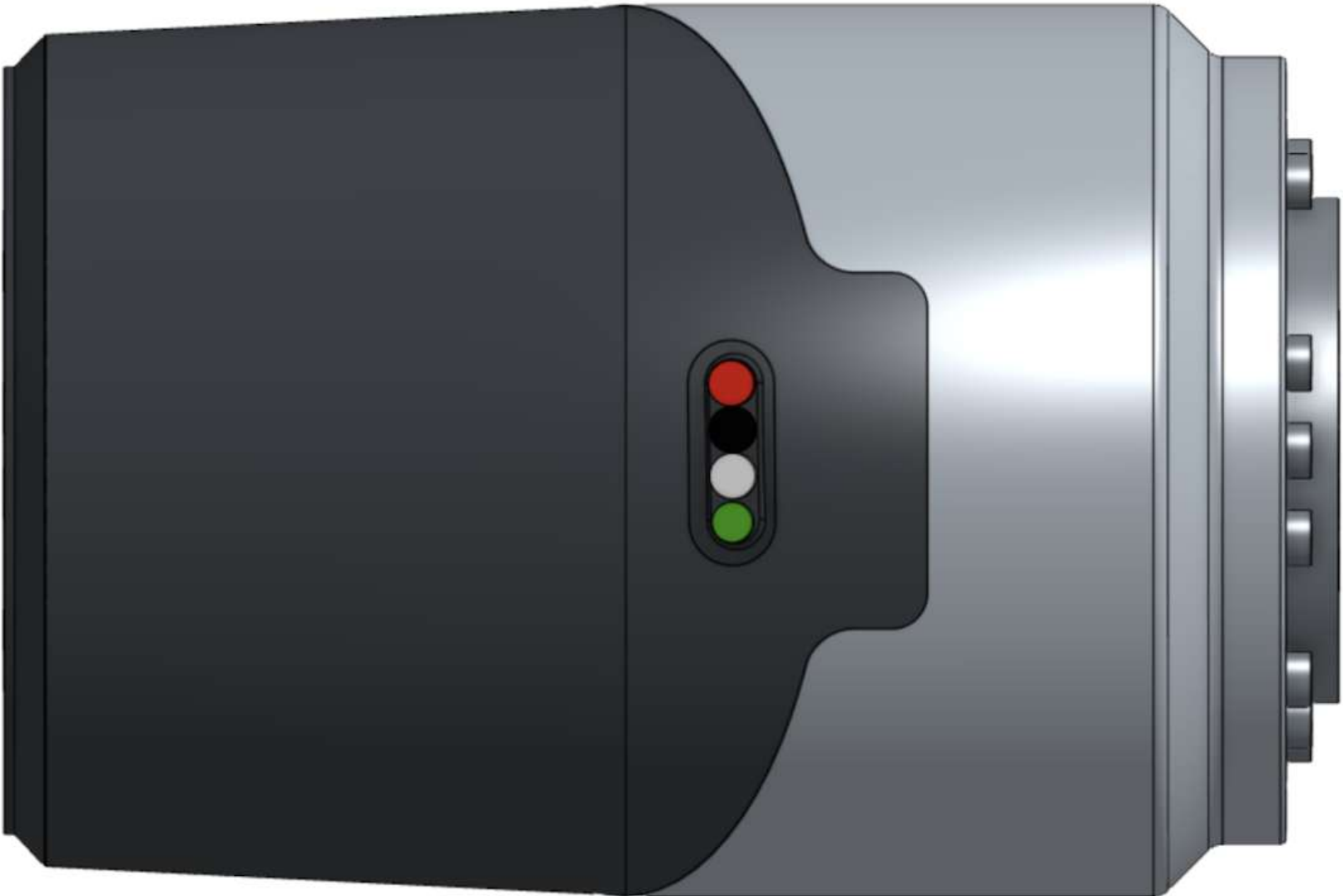
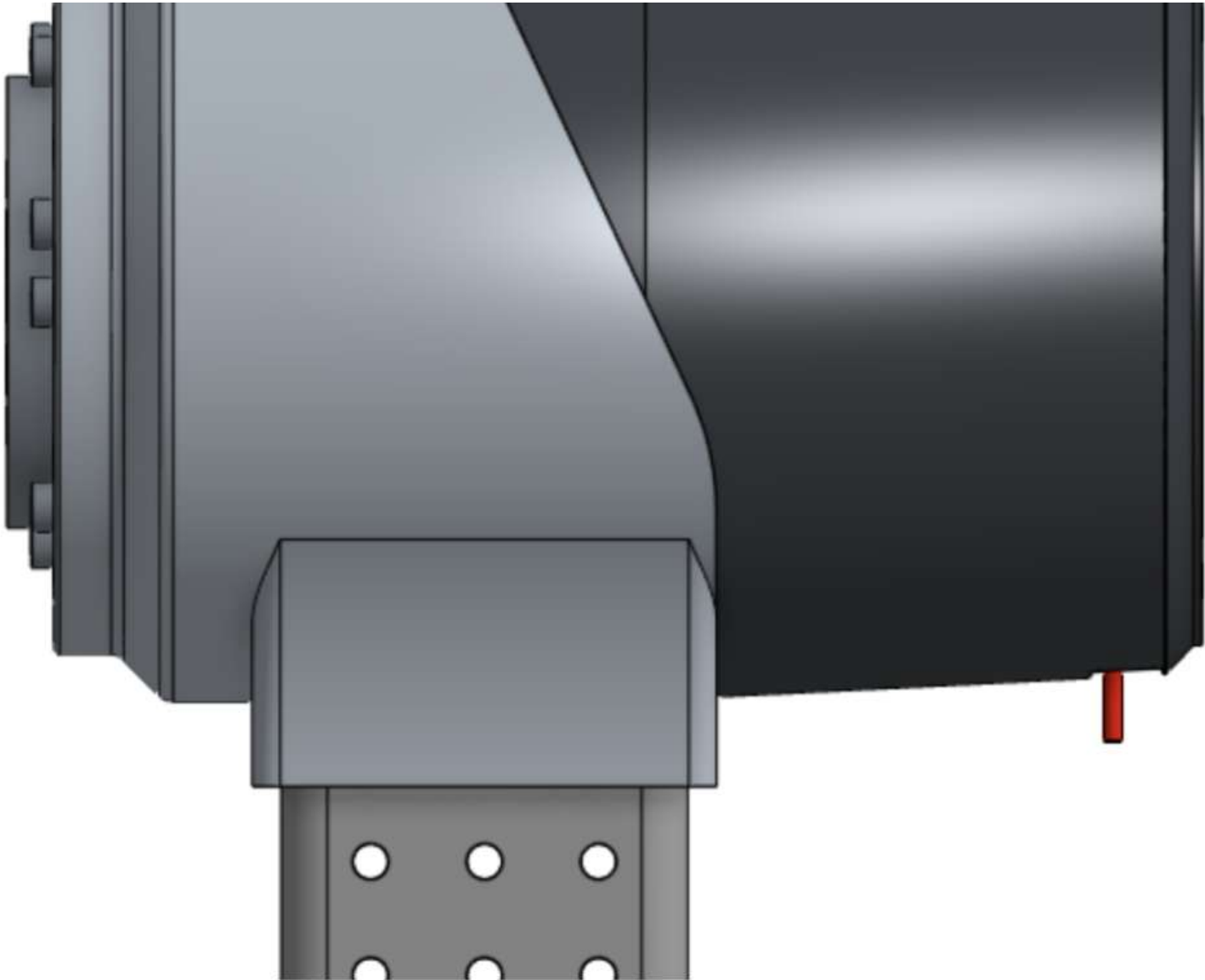
Harmonic Reducer

Tube Stock









Additional Photos









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Contact me: aaron.l.aviles.07@gmail.com

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