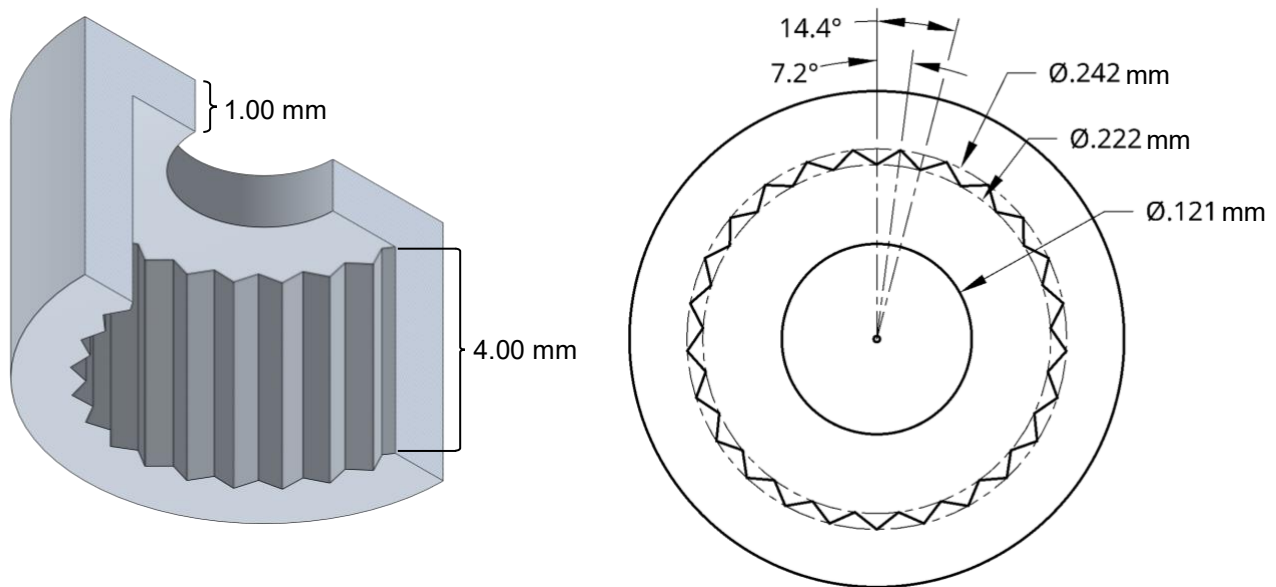


# SMART SERVO GUIDES: WORKING WITH CAD

This guide will cover CAD designs that will open up a wide range of options for designing new and innovative parts for the Smart Servo.

## PART 1: Designing Parts that the Smart Servo can Rotate.

The rotating part of the Smart Servo is called the output axle, or shaft. The top of this shaft has 20 teeth called the spline. To attach anything to the shaft securely, we need a precise design for a snug press fit that accommodates the M3 hold-down screw. Too much wiggle room in the design, or slop, will lead to advanced wear and tear on the part. Likewise, the part can crack if it must deform during the press fit. The images below reflect measurements in millimeters (mm) that have led to parts that perform well during testing.

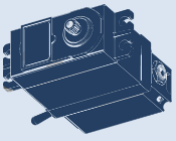


**UPDATES ARE COMING!**  
You can support this work by  
purchasing Smart Servos.

**PART 2: Designing Brackets for the Smart Servo [COMING SOON]**

**PART 3: Designing Structures for the Smart Servo [COMING SOON]**

**PART 4: Designing Mechanisms for the Smart Servo [COMING SOON]**



# SMART SERVO GUIDES: WORKING WITH CAD

Be sure to check out the available CAD models at Onshape using the link below.

<https://cad.onshape.com/documents/37e387090f272b014c900bf0/w/56ba3c6cb1de1fb9d70469d7/e/1d00cdcc32149aa12463d21e?renderMode=0&uiState=66f05777913c7518468f659f>



onshape®

Each model is printed and tested before being added to the SmartServo Attachments files. New models are continually being added as part of the Smart Servo Project. These CAD models can be viewed and downloaded for 3D printing. With a free Onshape account, models can be copied and modified to meet new criteria.