Camera Mount Adapters for the Logitech Adaptive Gaming Kit
DESIGN RATIONALE

Makers Making Change
A Neil Squire Program

Introduction

The Logitech Adaptive Gaming Kit provides 4 different styles of assistive switches that can be set up in a personalized way for those with limited mobility and dexterity. The kit includes a hook and loop pad for arranging buttons on a flat surface, but this may be less than ideal for some users.

The Camera Mount Adapters for the Logitech Adaptive Gaming Kit are a set of adapters that enable a user to mount the buttons from the Logitech Adaptive Gaming Kit using a standard mounting system for camera equipment. There is a huge variety of inexpensive solutions to mount camera equipment, so this adapter greatly increases the customizability options for the buttons in the Logitech Adaptive Gaming Kit.

Requirements

Goals

G01	To attach the assistive button from the Logitech Adaptive Gaming Kit to a standard ¼”-20 camera mounting system.

Functional Requirements

F01	The adapter must attach securely to the button.
F02	The adapter must provide a female ¼"-20 UNC thread for mounting.

Non-functional Requirement

NF01	Any 3D printable components must be 3D printable using PLA.
NF02	Must not deteriorate under daily use.

Constraints

C01	Single-build cost must be less than $10
C02	Design must only include easy-to-source commercial components.

Detailed Design

The Logitech Adaptive Gaming Kit consists of 4 types of buttons/triggers:

Size	Photo of Button	Photo of Camera Adapter

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Large		
Small		
Trigger		
Light Touch		

ATMakers created a set of four adapters. A few modifications were incorporated to improve the designs as described below:

- Changed the length of the hole for the screws so that all buttons can be attached with an 8mm machine screw. This was especially important as the variable trigger button suffered immediate, albeit repairable damage, and the light touch button was not functional once a longer screw was used.

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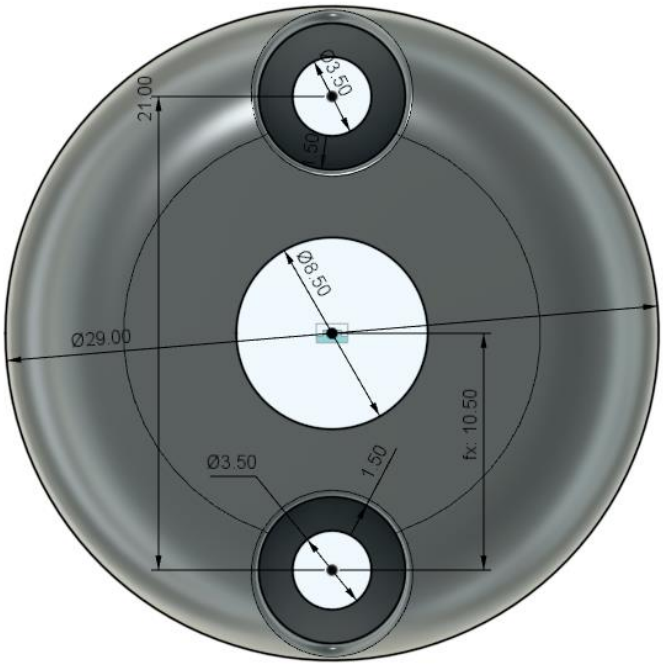
- The width of the countersink of the screw holes were widened from 5.5mm to 6.5mm in diameter to accommodate screws with wider heads.
- All the depths of the T-Nut inserts were different, some too deep or too shallow, so all were changed to 2.4 mm. (T-Nut flush with bottom with some margin)
- All the heights of the mounts were different, and all heights were changed to 9.5 mm. (T-Nut flush with top of mount).

Other important dimensions:

Small:



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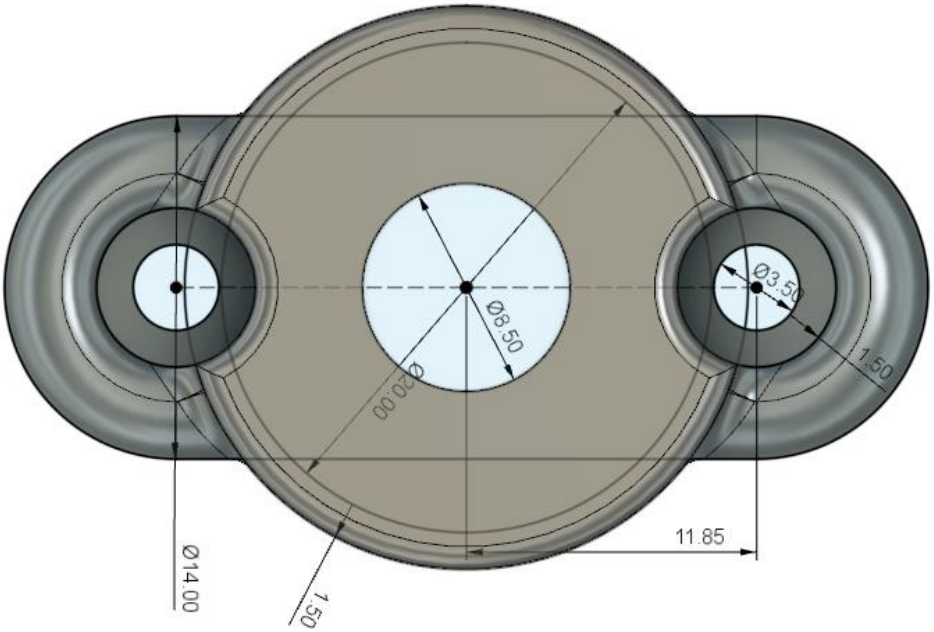
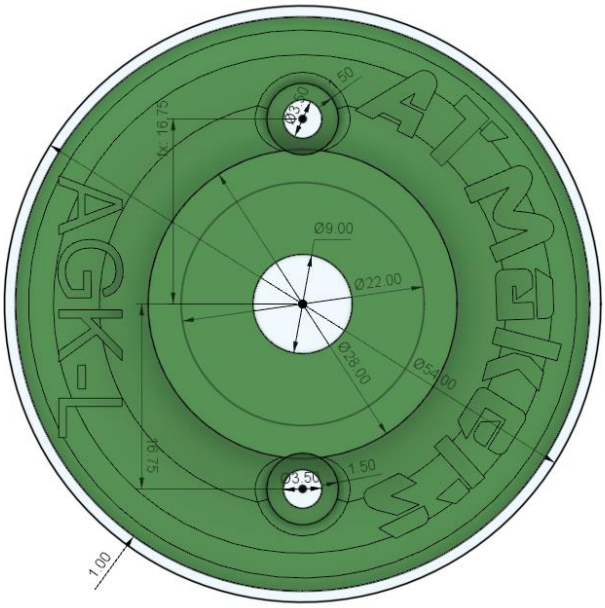
Light Touch:



Large:



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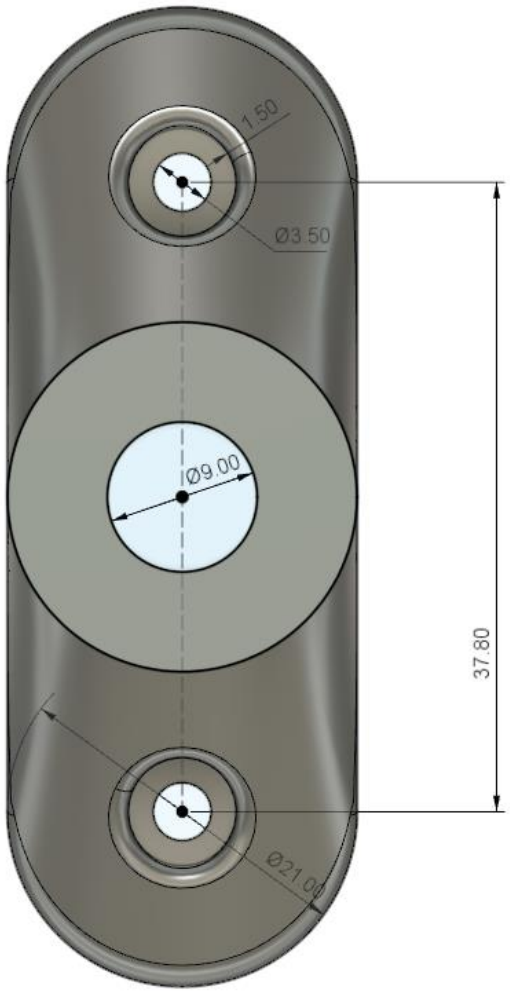
Variable Trigger:



Opportunities for Improvement

- Support can be difficult to remove from the 3D printed part, a design which doesn't involve support may produce a better-quality device and take less time to build. For example, a sacrificial bridge could be used to reduce the support required to print the T-nut recess.