# Overview

The Raindrop Switch is a small, cost-effective, 3D-printed assistive switch. The switch is 32 mm L x 22 mm W x 9 mm H and uses a standard 3.5 mm cable. Using the model of tactile switch specified, the activation force is about 1.3 N (130 gf). This switch is comparable in size, activation force, and travel to the AbleNet Mini Cup Switch.

A close-up of a cable

Description automatically generated

# Product Information

## Product Name

Raindrop Switch

## Device Category

Mark any relevant categories with an “X”:

|  |  |
| --- | --- |
|  | Adapted Toys |
|  | Aids for Daily Living (ADL) |
| X | Assistive Switches |
|  | Communication Aids (AAC) |
|  | Computer Access |
|  | Environmental Controls |
|  | Gaming |
|  | Keyguard |
|  | Kits |
|  | LipSyncs |
|  | Mounting |
|  | Recreation and Leisure |
|  | Seating and Positioning |
|  | Switch Interfaces |
|  | Writing Aids |

## User Value Statement

The Raindrop Switch is a cost-effective accessibility switch, an assistive device used by people with physical disabilities to control electronics (e.g. phones, computers, adapted toys, game controls, etc.).

This particular switch is well-suited for use by a finger. It can be plugged into any standard 3.5 mm AT interface and even the Xbox Adaptive Controller. Users can arrange multiple switches in an array to get input from more than one finger. The switch can be mounted using adhesive on the rear surface.

## Designer

Neil Squire Society

# Device Information

## Overview

If you need a small, affordable assistive switch, the Raindrop Switch offers a nickel-sized solution for cost-effective control of assistive devices.

## Disability Type

Select one or more disability types and mark with an “X”:

|  |  |
| --- | --- |
| x | Agility / Dexterity |
|  | Arthritis |
|  | Cognitive |
|  | Hearing |
|  | Mobility |
|  | Mobility |
|  | Pain |
|  | SCI |
|  | Vision |
|  | Other |

## Disability Type Description

The device is intended for users who have difficulty used small buttons or switches, and needs an accessible switch to operate them.

## How To Use

This switch is well-suited for use by a finger. This switch can be plugged into any standard 3.5 mm port on an assistive device. It can also be used with the Xbox Adaptive Controller. Multiple switches can be used to get input from more than one finger. The switch can be mounted using adhesive on the rear surface.

## Estimated Cost

The estimated material cost of the device for a single build:

|  |  |
| --- | --- |
| X | $0 - $10 |
|  | $11 - $25 |
|  | $26 - $50 |
|  | $51 - $100 |
|  | $101 - $250 |
|  | $250+ |

## Attribution

Raindrop Switch, Neil Squire Society, Attribution-ShareAlike4.0 International

# Maker Information

## Project Skills

Mark the required project skills with an “X”:

|  |  |
| --- | --- |
| X | 3D Printing |
|  | Custom PCB |
|  | Electronics |
|  | Laser Cutting |
|  | Mechanics |
|  | Software |
| X | Soldering |
|  | Woodworking |
|  | Other |

## Skills Description

This build requires the use of a soldering iron, hot glue gun, flush cutters, wire strippers, and pliers.

## Tools Needed

|  |  |
| --- | --- |
| X | 3D Printer |
| X | Common Hand Tools |
|  | Common Power Tools |
|  | Laser Cutter |
| X | Soldering Iron |
|  | Specialized Tooling |

## Print time (hrs)

1 hour

## Assembly time (hrs)

0.25 hours

## Build Instructions

This build uses a tactile button and mono cable in a 3D printed housing to form the switch. The cable is cut in half and the wires stripped before soldering them to the leads on the button. The button is held in the enclosure using hot glue.

## Download Link

## <https://github.com/makersmakingchange/Raindrop-Switch/archive/refs/heads/main.zip>

## Project Link

<https://github.com/makersmakingchange/Raindrop-Switch>

# License

## License

Hardware: CERN 2.0 Weakly Reciprocal License (CERN-OHL-W v2) or later

Documentation: Attribution-ShareAlike4.0 International