**Title**

Finger Lift Switch

**Subtitle**

<Short description>

## Device Specifications

Build Time:

 < 1hr

1-4 hr

 5-10hr

 >10hr

Cost:

 $0 - $10

 $11 - $25

 $26 - $50

 $51 - $100

 $101 - $250

 $250+

Stage: Recently Added

Skills: 3D Printing, Soldering

Need: Mobility, Agility/Dexterity

Disability: Mobility / Physical

Difficulty: Intermediate

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Usages: Environmental Controls, Computer Access, Communication Aids (AAC), Recreation and Leisure

Type: Assistive Switches

Designer: Derrick Andrews

## Device Details

### Overview

The Finger Lift Switch is an assistive switch that is activated by lifting a resting finger upwards. The switch activation distance is approximately 5 mm and the required force is about 5 grams-force.

### Usage

Connect the cable to an assistive device with a 3.5 mm input jack. The user’s lifting fingertip should be placed under the finger lift pad, resting on a lower surface or splint.

When the user raises their lifting finger, the finger lift lever will rotate and activate the switch. The switch will de-activate when the user lowers their lifting finger back to the resting surface.

### Cost

The cost of components for a single switch is approximately $11 CAD. However, obtaining the minimum quantities for a single build will bring the materials costs to $66 CAD.

### Build Instructions

The Finger Lift Switch consists of 3D printed parts and electronic components. The Assembly Guide is available at the GitHub repository.

#### Skills Required

* 3D Printing
* Soldering
* Assembling screws

#### Time Required

3D Printing Time: 1hr 30m

Assembly Time: 30m

#### Tools

* Soldering Iron (fine tip)
* 60/40 rosin core electrical solder
* Medium size Phillips screwdriver (type #1)
* Side cutters
* Wire strippers
* Super glue (gel type is best)
* Hot melt glue gun (low temp type)
* Permanent felt marker (fine tip)
* Needle nose pliers
* Sturdy metal tweezers
* Multimeter (with continuity reading capability)

#### Components

* 1X Ball Bearing: Type MR85ZZ (8 mm OD 5 mm ID)
* 2X 5 mm x 1 mm Magnets (Neodymium)
* 1X Reed Switch (Glass) Contact Normally Open (N/O) Magnetic Induction Switch (2 mm × 14 mm)
* 2X M3 x 8 mm Stainless Steel screws (Base & Base Cap screws)
* 1X M3 x 10 mm Stainless Steel screw (Counterweight screw)
* 1X M3 x 12 mm Stainless Steel screw (Bearing Screw)
* 1X M3 x 16 mm Stainless Steel screw (Balance screw)
* 5X M3 Stainless Steel Nut
* 1X 1/4-20 (Imperial size) Nut
* 1X 5-foot mono audio cable with 3.5 mm male phono plug

#### 3D Printing

* 1X Finger Lift Lever (3D)
* 1X Balance Screw Holder (3D)
* 1X Counterweight Nut Holder (3D)
* 1X Bearing Base (3D)
* 1X Bearing Base Cap (3D)
* 1X Reed Switch Plate (3D)

### Design

This design was created using OpenSCAD.

### Attribution

Designed by Makers Making Change (Derrick Andrews) in conjunction with Sunnyhill.