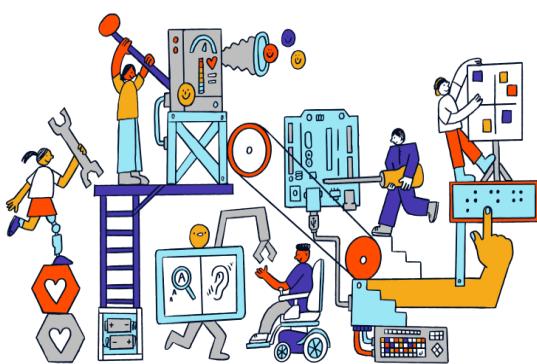


# Product Manual: Squeeze/Grip Switch



**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



Revision: 1.0

Date: 01-Dec-2025

## Table of Contents

<b>Table of Contents.....</b>	<b>1</b>
<b>1. Introduction.....</b>	<b>2</b>
1.1 About the Community Partner.....	2
1.2 Product Description.....	3
WHY?.....	3
WHO?.....	3
WHAT?.....	3
HOW?.....	3
1.3 Product Overview and Features.....	4
1.4 Bill of Materials (BOM).....	5
<b>2. User Guide: Instructions for Use.....</b>	<b>6</b>
2.1 Set Up Instructions.....	7
2.2 Maintenance.....	8
2.3 Troubleshooting.....	9
<b>3. Maker Guide: Assembly Instructions.....</b>	<b>10</b>
3.1 Assembly Guide.....	11
<b>4. Credit and Open Hardware Licence.....</b>	<b>13</b>
4.1. License Statement and Source Availability.....	13
4.2 CERN Open Hardware Licence.....	13

<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



# 1. Introduction

## 1.1 About the Community Partner

Our journey began in 1970 with the will of Mrs Shakuntala Bhatia. Under the banner of the Asian Women's Welfare Association, Mrs Bhatia and her peers, like Mrs Tambyah and Mrs Kula, identified gaps in the community to help the underserved.

The Association incorporated AWWA Ltd on 7 January 2015, a Singapore company limited by guarantee. In April of the same year, AWWA Ltd took over the operations and activities previously managed by the Association. In 2022, the Association was dissolved, and AWWA continues to address social service gaps as they arise, by being guided by our mission and strategic vision.



**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 1.2 Product Description

This table clarifies the intended purpose and scope of the product:

<b>WHY?</b>	Special needs students with low grip strength are often excluded from using toys and/or face a lack of appropriate ways to express themselves.
<b>WHO?</b>	For special needs students with low grip strength who are learning to understand cause-and-effect and have fun.
<b>WHAT?</b>	A Squeeze switch with an additional 3.5mm male mono audio jack cable to trigger power on/off of other toys or playback audio.
<b>HOW?</b>	This product transforms common products like shampoo bottles with conductive fabric into working switches that trigger power of other toys or play back audio. Students use the squeeze switches to improve grip strength. It allows students to experience and understand the cause-and-effect.

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 1.3 Product Overview and Features



1. Connect to other electronic toys with a female 3.5mm mono audio jack cable.
2. Students can use it to improve grip strength and focus.
3. Can be triggered by squeezing the shampoo bottle in all directions in horizontal or in student hand grip position.

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 1.4 Bill of Materials (BOM)

Item	Supplier/Product Link	Price	Quantity
Shampoo bottle	<a href="#">Click Here</a> - Link too long	6.21 SGD/4pcs	1
Conductive fabric	<a href="#">Click Here</a> - Link too long	9.70 SGD/1x1.1m	1
3.5mm male mono audio jack cable	<a href="#">Click Here</a> - Link too long	5.42 SGD/10pcs	1
Sewing kit/Stapler	<a href="#">Click Here</a> - Link too long	7.34 SGD/set	1
Cable tie	<a href="#">Click Here</a> - Link too long	1.62 SGD/100pcs	1
Kapton tape 20mm Wide	<a href="#">Click Here</a> - Link too long	2.22 SGD/roll	1
Copper tape 10mm Wide	<a href="#">Click Here</a> - Link too long	3.19 SGD/roll	1

<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## **2. User Guide: Instructions for Use**



<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 2.1 Set Up Instructions

Use the following table for a step-by-step guide to setting up the product:

<b>Setting up</b>	
Connect the 3.5mm male mono audio jack cable to toys, light or playback button.	 A photograph showing a black spherical LED light with a black cable and a yellow flexible tube with a clear cap.
Squeeze the shampoo tube to trigger it	 A photograph showing a hand squeezing a yellow flexible tube next to a black spherical LED light, which is illuminated with red and green lights.

<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 2.2 Maintenance

1. Pull the conductive fabric from the bottom of the shampoo tube if the connection is intermittent
2. Check the wire are the shampoo cap area if the wire came loose or break off

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 2.3 Troubleshooting

<b>Problem</b>	<b>Possible Cause</b>	<b>What You Can Try</b>
Soldered connection broken	Squeezed to hard and broke the soldering	Try to solder back or contact EG support
	Didn't solder properly	Try to solder back or contact EG support
Conductive fabric loosen after prolong usage and it always connected	The 2 piece conductive fabric connection after prolong usage	Tension the consecutive fabric at the end of the shampoo bottle.

<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good

**2025/2026**

## Squeeze/Grip Switch Product Handbook

Rev: 1.0



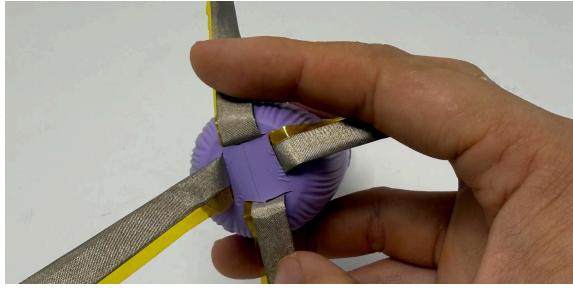
## 3. Maker Guide: Assembly Instructions



<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good

### 3.1 Assembly Guide

Steps	Images
<p>Cut 4 strips of the conductive fabric 250mm by 30mm.</p> <p>Fold the conductive fabric 3 times half each fold as shown in the image.</p> <p>Tape the conductive fabric with kapton tape</p>	
<p>Cut 4 slots on the bottom of the shampoo bottle that are big enough to put the folded conductive fabric in. Put the fabric into it</p>	 
<p>Remove the shampoo bottle cap and the white cover part. Push/pull the fabric through the top of the shampoo hole into top, bottom, left and right have a strip of fabric.</p>	

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



Steps	Images
	A close-up photograph of a hand holding a purple plastic bottle. A piece of purple fabric is wrapped around the middle of the bottle, secured with several strips of copper tape. The bottle is being held from the side.
Sew the bottom end of the fabric or staple it	A photograph showing two plastic bottles standing upright. Both have purple fabric covers with copper tape at the bottom. The yellow bottle is on the left and the purple one is on the right.
Use blue tape(red box) to secure the fabric on top side of the shampoo bottle into top, bottom, left and right have a strip of fabric. Use the copper tape(green box) to join top with right and bottom with left	A close-up photograph of a purple fabric strip being secured onto a black plastic bottle. Two red boxes highlight the blue tape used to secure the fabric to the top edge of the bottle. A green box highlights the copper tape used to join the fabric strips together at the top center.

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



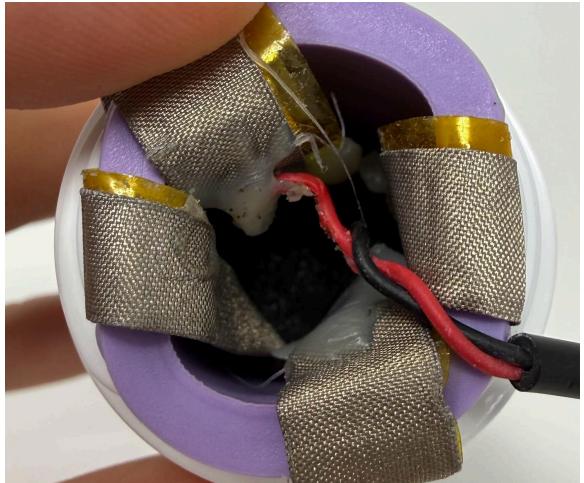
Steps	Images
<p>Install back the white cover part to the shampoo bottle. Use a multimeter to check connectivity.</p> <p>Top with right and bottom with left will beep without squeezing. Top with bottom and left and right will beep only if squeezed</p>	A photograph showing the internal components of a shampoo bottle. A white plastic cap is being attached to the top of the bottle. A red circle highlights the white cap area, and a red arrow points from the text in the adjacent column to this circle.
<p>Loop the 3.5mm male mono audio jack wire in the transparent cover and cable tie it.</p>	A photograph of a hand holding a clear plastic shampoo bottle. The internal circuit board and wires are visible. A black 3.5mm male mono audio jack is inserted into one of the yellow pads on the board. The hand is shown looping the wire around the transparent plastic cover of the bottle.
<p>Insert the sponge into the shampoo bottle</p>	A close-up photograph showing a white sponge being inserted into the interior of a shampoo bottle. The sponge is being held by a hand, and a red arrow points to the sponge inside the bottle's cavity.

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



Steps	Images
<p>Solder the 3.5mm male mono audio jack wire to the top and bottom or left and right conductive fabric Add hot glue to the soldering point to secure it.</p>	

**2025/2026**

**Squeeze/Grip Switch Product Handbook**

**Rev: 1.0**



## 4. Credit and Open Hardware Licence

This section provides the required legal notices and attribution for the open hardware design used to create this product.

### 4.1. License Statement and Source Availability

The hardware design used in this product is licensed under the CERN Open Hardware Licence Version 2 – Weakly Reciprocal (CERN-OHL-W 2.0) or later. By distributing this product, we are obligated to make the complete design source available to you.

- Complete Source Availability: The complete design files (Source), including schematics, assembly instructions, and any modifications made by Engineering Good, are available free of charge at a permanent online location:  
<https://github.com/Engineering-Good/T4G-Squeeze-Grip-Switch>
- Modification Notice: This version of the Squeeze/Grip Switch was modified by Engineering Good to include the 3.5mm mono audio jack functionality for triggering other toys. The full, modified source is available at the URL listed above.
- Full License Text: The complete legal text of the CERN Open Hardware Licence Version 2 – Weakly Reciprocal\*\* follows this section.

### 4.2 CERN Open Hardware Licence

The full text of the license is available here: [CERN-OHL-W 2.0 Full Text](https://cern-ohl-w.readthedocs.io/en/latest/)

<https://www.engineeringgood.org/bespoke-projects/>

© 2024 Engineering Good