



SECTION B-B

A

SECTION A-A

WA008 3DP TOY

WA008 SOAP

**NOTE:**  
**TOYS THAT OFTEN CAUSE CHOKING HAVE**  
**A DIAMETER/WIDTH OF LESS THAN 45MM.**  
**THEREFORE THE SMALLEST DIMENSION ON**  
**THE TOYS MUST BE GREATER THAN 45MM.**

|  |              |          |  |       |                                    |
|--|--------------|----------|--|-------|------------------------------------|
| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>SURFACE FINISH: A-3 / 0.05Ra (µm)<br>TOLERANCES: X.XX ±0.35<br>X.X ±0.75 X, ±1.50<br>ANGULAR: ±0°30' |              |          | FINISH:<br><b>MANUAL SANDING &amp;<br/>DEBURRING</b> |       | DEBURR AND<br>BREAK SHARP<br>EDGES |
| NAME   | SIGNATURE    | DATE     |  |       |                                    |
| DRAWN  | BRYNMOR JOHN | 09/04/19 |  |       |                                    |
| CHK'D  |              |          |  |       |                                    |
| APPV'D   |              |          |  |       |                                    |
| MFG  |              |          |  |       |                                    |
| Q.A  |              |          | MATERIAL:  | MIXED |                                    |
|  |              |          | WEIGHT:  | N/A   |                                    |

| REVISION |             |             |    |      |
|----------|-------------|-------------|----|------|
| SYM      | GRID SYSTEM | DESCRIPTION | DR | DATE |
|          |             |             |    |      |
|          |             |             |    |      |
|          |             |             |    |      |
|          |             |             |    |      |
|          |             |             |    |      |
|          |             |             |    |      |

DO NOT SCALE DRAWING      REVISION : A

3RD ANGLE PROJ.     

TITLE:  
**SOAP & TOY  
 ASSEMBLY**

DWG NO.  
**WA008 ASSY**      A3

SCALE: 1:15      SHEET 1 OF 1

## Manual

### **Introduction:**

Part Number:

WA009

Item name:

Hidden Incentives Soap

Item description:

Soap used to incentivize handwashing, featuring a plastic toy on the inside.

Start date:

26 October 2016

End date:

23 December 2017

Designers name:

Multiple (please see notes)

Makers name:

Susan Long

Location:

Iraq

Version:

1

Tools used:

UP mini (3D printer), Mould, Jug, Pallet knife, Knife, Scissors, Microwave,

Material used:

ABS filament, Cling film. Rubbing alcohol/surgical sprit (spray), Printed labels, Soap

Quantity produced:

370

**Production Costings (\$):**

| <b>Quantity 1</b> | <b>Quantity 10</b> | <b>Quantity 100</b> |
|-------------------|--------------------|---------------------|
| \$1.5             | \$15               | \$150               |

**Readiness Level:**

| <b>Field</b> | <b>Maker</b> | <b>User</b> | <b>Tech</b> | <b>Risk</b> |
|--------------|--------------|-------------|-------------|-------------|
| <b>5</b>     | <b>5</b>     | <b>4</b>    | <b>5</b>    | <b>5</b>    |

**Bill of Materials:**

| Item No. | Part No. | Item name | Description  | Quantity |
|----------|----------|-----------|--|----------|
| 1        | WA008    | Toy       | 3D printed toy<br>(12 options -<br>see notes for<br>details) | 1        |
| 2        | WA008    | Soap      | Cast soap (see<br>notes for<br>details)                      | 1        |

**Production:**

Production time:

2hrs

Step 1:

Load .STL into the slicing software and scale to 50 x 35 x 30 mm

Step 2:

Press print to send the design (gcode) to the 3D printer.

Step 3:

When the print has completed allow the part to cool.

Step 4:

Remove the part from the print bed.

Step 5:

Remove the support, brim and any excess material (deburring).

Step 6:

Cut soap into squares approx. 2cm<sup>3</sup>

Step 7:

Microwave soap until melts (microwave for approx. 3min for 400 grams of soap)

Step 8:

Spray rubbing alcohol into mold

Step 9:

Gently pour soap, filling half the mold



Step 10:

Spray more rubbing alcohol to dissipate bubbles



Step 11:

Leave to semi-harden

Step 12:

Place toy in soap and spray with rubbing alcohol

Step 13:

Fill the remainder of mould with melted soap and spray alcohol until bubbles removed



Step 14:

Leave to harden overnight (or in the fridge for 1-2hrs)



Step 15:

Remove from mould and trim edges



Step 16:

Pack – cut out the labels below and wrap in cling film



**Assembly:**

Assembly time:

N/A

Step 1:

N/A

**Disassembly:**

Disassembly time:

N/A

Step 1:

N/A

**Use:**

Step 1:

Unpack from protective plastic wrapping

Step 2:

Use the soap as normal

**Notes:**

**SOAP TYPE:**

Clear, Pre-sliced SLS Free Melt and Pour Glycerin Soap Smart Base

**SOAP INGREDIENTS:**

Aqua;Glycerin;Propylene Glycol;Sodium Laureth Sulfate;Sodium Stearate;Sorbitol;Sodium Laurate;Sodium Chloride;Sodium Thiosulfate;Etidronic Acid

# Size Considered Choking Hazard

In the United States, the Child Safety Protection Act requires warning labels on packaging for toys containing small parts. A tool called the small parts test fixture is used to measure toy parts. It is a cylinder tube that is 1.25 inches (3.1cm) in diameter and between 1-2.25 inches (2.5-5.7cm) deep. It is designed to mimic a child's mouth and pharynx. Any object that fits in the tube is considered a small part and must have a label on its packaging indicating it is a choking hazard for small children.

**Toys will not fit into this tube so are not considered a choking hazard for small children.**

1. Fish <https://www.thingiverse.com/thing:920396>
2. Elephant <https://www.thingiverse.com/thing:1220231>
3. Rabbit <https://www.thingiverse.com/thing:1220272>
4. Sheep <https://www.thingiverse.com/thing:1220389>
5. Dinasaour <https://www.thingiverse.com/thing:1278845>
6. Duck <https://www.thingiverse.com/thing:1227937>
7. Dolphin <https://www.thingiverse.com/thing:1478018>
8. Cat <https://www.thingiverse.com/thing:901128>
9. Snake <https://www.thingiverse.com/thing:1220259>
10. Lion <https://www.thingiverse.com/thing:2001969>
11. Spider <https://www.thingiverse.com/thing:1220280>
12. Penguin <https://www.thingiverse.com/thing:1220257>