Thermal Detonator V1

Build Instructions

3D Printed Thermal Detonator V1 Model Kit

Congratulations on # the STL Files for the 3D printed plastic model of a Class-A Thermal Detonator

All parts can be 3D printed in either PLA or ABS plastic. Pictures featured in the instructions are the actual STL files.

It is recommended you use PPE (Personal Protection Equipment) when construction this model kit. Sanding any plastic creates a fine dust which if breathed into the lungs, is not good. The dust can also get in to your eyes, so please use both a mask and goggles when sanding parts and always work in a well ventilated area. Plastic dust can get everywhere!

Tools List

The following tools are what I recommended to use to build your Thermal Detonator.

- Eye Protection - Goggles to protect your eye's from the dust particles
- Dust Mask - For protection from breathing in the dust particles
- Sandpaper - Various grades 80 Grit, 180 Grit and Wet & Dry 600 Grit (A few sheets of each)
- Small Metal Files - Various widths and shapes
- Super Glue
- 2 Part Epoxy Glue
- Small Pair of Side Cutters
- Needle Nose Pliers
- Exacto Knife
- Filler - Bondo, wood filler, fine car filler or any other type of filler that is easy to sand can be used.
- Paint - Filler Primer, Colours of your choice

3D Printed Parts List

PART #1: Dome Bottom

PART #2: Dome Top

PART #3: Slide Switch

PART #4: Slide Switch Tracks

PART #5: Switch Retainer Right

PART #6: Switch Retainer Left

PART #7: LED Holder

PART #8: LED Mount

PART #9: PCB Holder

PART #10: Battery/Speaker Holder

PART #11: 3 Arm Stand Panel

PART #12: 6 Arm Stand

PART #13: Battery Charger Case

PART #14: Front LED Bezel X 3

Additional Hardware

2 x 2.5 x 10mm Screws for the Top Slide Retainers

1 x 5mm LED LENS - Top Cover

3 x 3mm Metal LED Holders (Optional)

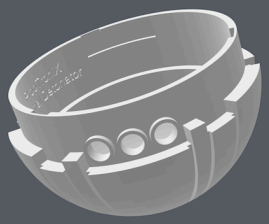
3 x 3mm LEDs - Can be any Colour

Electronics Kits

Self Build Electronics Kit	Buy at PropTronix.co.uk
Pre-Built Electronics Kit	Buy at PropTronix.co.uk

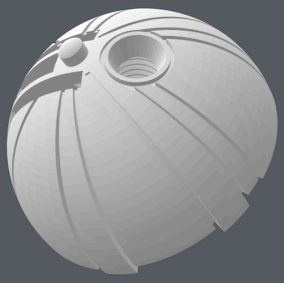
Part Identification Images

Part 1 - Dome Bottom



80% Infill - Supports

Part 2 - Dome Top

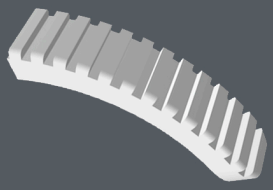


80% Infill - Supports

Part 3 - Slide Switch

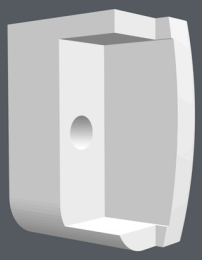
80% Infill - Supports

Part 4 - Slide Switch Tracks



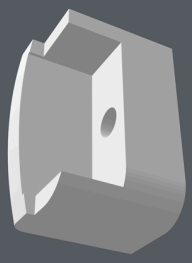
30% Infill - Supports

Part 5 - Retainer Right



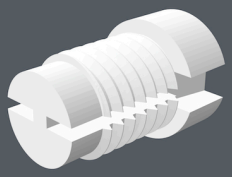
80% Infill - NO Supports

Part 6 - Retainer Left



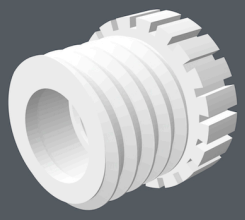
80% Infill - NO Supports

Part 7 - LED Holder



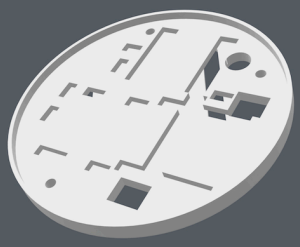
80% Infill - NO Supports

Part 8 - LED Mount



80% Infill - NO Supports

Part 9 - PCB Holder

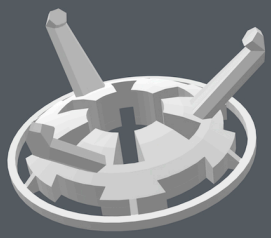


30% Infill - NO Supports

Part 10 - Speaker & Battery

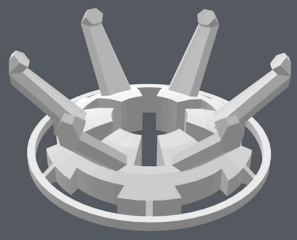
30% Infill - Supports

Part 11 - 3 Arm Stand



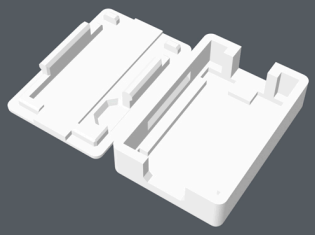
80% Infill - Supports

Part 12 - 6 Arm Stand



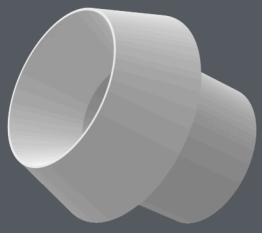
80% Infill - Supports

Part 13 - TP4056 Holder



80% Infill - NO Supports

Part 14 - Front LED Bezel X 3



100% Infill - NO Supports

Sanding and Filling

Sanding all the parts is a necessary process and the more time you take on this process the better the finish of your Thermal Detonator will be. Start with the 80 grit sandpaper and reduce the grit until a nice smooth finish is achieved.

PLEASE WEAR A DUST MASK & GOGGLES WHEN SANDING

DO NOT USE POWER TOOLS for sanding, these create heat very quickly and will soften the plastic and potentially ruin the part. Hand sanding is a much slower process but with patience and time you will achieve a really good finish ready for assembling and painting.

- Rounded Parts - Roll sandpaper around the part to sand, both inside and outside of barrels can be sanded this way.
- Flat Surfaces - Use a sheet of sandpaper on a flat surface to sand these parts.
- Awkward Shapes and Small Details - Use small metal files with shaped sides and sanding sticks to sand these parts, being careful not to sand away the details too much.

Check all parts for voids and gaps and fill with filler, once dry and hardened sand these parts again. **ONLY** move on to assembling the Thermal Detonator once you are really happy with the sanded finish of all the parts.

Painting

The main colours used for painting the Thermal Detonator are Black and Silver, but you can paint it in whatever colours you choose. I recommend using cans of acrylic spray paints, but you can also use an airbrush.

PLEASE WEAR A MASK WHEN PAINTING

- Always paint in a well ventilated area, preferably outside.
- Wear PPE (Personal Protective Equipment) when painting.
- Hang parts for printing where possible - This gives a better angle for painting and also for drying the parts.
- Apply serval lights coats of paint rather than one which coat and try to avoid drips and runs.

1. Filler Primer - Spray Paint all parts with Filler Primer - This will fill any very small voids or gaps. If there are still some voids and gaps fill these with filler and sand all the parts with very fine grit wet and dry sandpaper to achieve a real good smooth finish ready for the final colour.
2. Main Colour - Use several lights coats of paint allowing each to dry for the recommended time before applying the next coat. Don't rush and try to paint thick coats of paint, you will possibly loose some of the finer details on the parts, and possibly have to start the sanding process again.
3. Allow the paint to fully dry before attempting to assemble the Thermal Detonator. I recommend at least 24 hours.
4. Remember any parts that are required to be glued together will need to have the paint paint sanded first. Gluing Painted parts together is NOT recommended.
5. Weathering - This is a personal choice. If you want to give your Thermal Detonator the weathered look check out the many video's on YouTube showing how to achieve that weather look.

Assembling the 3D Printed Thermal Detonator V1.0

1. Top LED Assembly

Put the **5mm Red LED Lens** on top of **Part #7 - Top LED Holder** and screw into **Part #8 - Top LED Mount** then screw into the **Part #2 - Dome Top**.

2. Front LED Assembly

Fix the **3 x 3mm Metal LED Holders** (Optional) or use **Part #14 - Front LED Bezel** into the front of **Part #1 - Dome Bottom** and insert **3 x 3mm LEDs**.

3. Switch Assembly

Glue **Part #4 - Slide Switch Tracks** into **Part #3 - Slide Switch** then place into **Part #2 - Dome Top** making sure the curved end faces forward.

Put **Part #5 - Retainer Right** & **Part #6 - Retainer Left** on to the lugs of **Part #3 - Slide Switch** and use the **2 x M2.5 x 10mm Screws** to fix. Make sure these are not done up too tightly or the switch wont slide.

4. Thermal Detonator Assembly

Place **Part #1 - Dome Top** onto **Part #2 - Dome Bottom** aligning the **Part #1 - Dome Top** tabs into the Holes on **Part #2 - Dome Bottom** and turn clockwise until aligned so secure.

You should now have a completed Class-A Thermal Detonator

Fitting TDTroniX Electronics into the Thermal Detonator

Pre-Built Kit

Click the link to watch the Pe-Built Kit Quick install Video - TDTroniX Pre-Built Kit Installation

Self Build Kit

1. Solder the Pin Headers to the TDTroniX PCB.

3. Place the Seeedunio, DFPlayer Mini and PAM8403 Amplifier into the Soldered Pin Headers.

3. Solder the 7 x JST PH 2.0 Female Connector Sockets to the PCB

4. Solder a JST PH 2.0 Make Lead to the Speaker - Red Lead to Speaker **POS** and Black Lead to Speaker **NEG**

5. Solder a JST PH 2.0 Male Lead to the Micro Lever Switch - It does NOT matter which way round the leads go.

6. Solder a JST PH 2.0 Male Lead to the Top 5mm Red LED - Red Lead to LED **POS** and Black Lead to led **NEG**

7. Solder 3 x JST PH 2.0 Male Leads to the 3 x Front 3mm LED's - Red Lead to LED **POS** and Black Lead to LED **NEG**

8. Change the Male connector on your Battery to a JST PH 2.0 Male Lead - Red Lead to Battery **POS** and Black Lead to Battery **NEG**

LED Resistors and switch resistor are NOT required as these are pre-soldered on the TDTroniX PCB.

9. One all leads and sockets are soldered in place follow the - TDTroniX Pre-Built Kit Installation video.

Congratulations! you should now have a fully working Class-A Thermal Detonator.

PropTroniX
Star Wars Props and Electronics

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