

# Boom Box

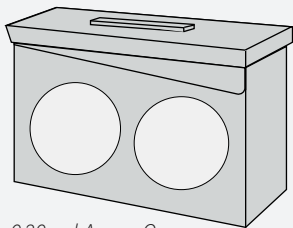
*DIY Ammo Can Speaker Kit*



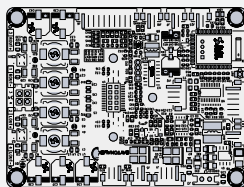
MAN CRATES  
PROJECTS

# COMPONENTS

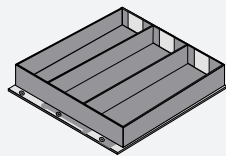
Everything needed to build your very own speaker



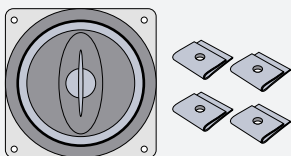
0.30-cal Ammo Can  
**x 1**



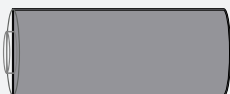
JAB-2 Bluetooth Amp Board  
**x 1**



Lithium Battery Balance  
**x 1**



4" Speakers & Mounting Hardware  
**x 2**



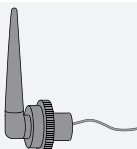
18650 Lithium Battery  
**x 3**



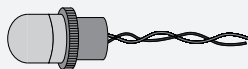
Pilot and Step Drill Bit  
**x 1**



Bluetooth Switch  
**x 1**



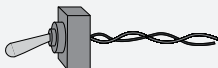
Bluetooth Antenna  
**x 1**



LED Indicators (Red, Blue, Green)  
**x 3**



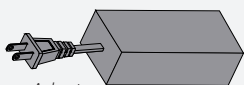
3.5mm AUX Jack  
**x 1**



On/Off Switch  
**x 1**



Volume Control  
**x 1**



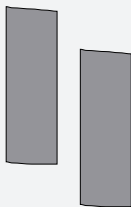
Power Adapter  
**x 1**



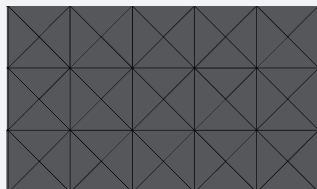
Cable Ties  
**x 3**



Rubber Feet  
**x 4**



Adhesive Velcro  
**x 1**



Acoustic Foam  
**x 1**

## ***The Shell***

---

*This NATO-spec .30 cal ammo can is tough as nails. We've gotten you started by breaching the sides to make room for your incoming speakers, but it'll be your mission to carve out room for other inputs with the included drill bit.*

## ***The Sound***

---

*The sound is provided by the JAB-2 bluetooth amplifier board working in concert with 4-inch speakers. We've provided the functional cables necessary to connect the panel mounts and speakers without soldering. The external Bluetooth antenna and auxiliary input jack give you two ways to rock out.*

## ***The Firepower***

---

*The amplifier's required 12 volts can be supplied through either the Huntkey power adapter or lithium battery balance. A troop of three 18650 batteries provide all the energy you'll need to jam for hours on end.*



***This project takes 2 hours  
on average to complete***

*You will also need: A drill, screwdriver, sandpaper, ruler, and pencil.*

# GETTING STARTED

Laying out where everything goes



Fig 1

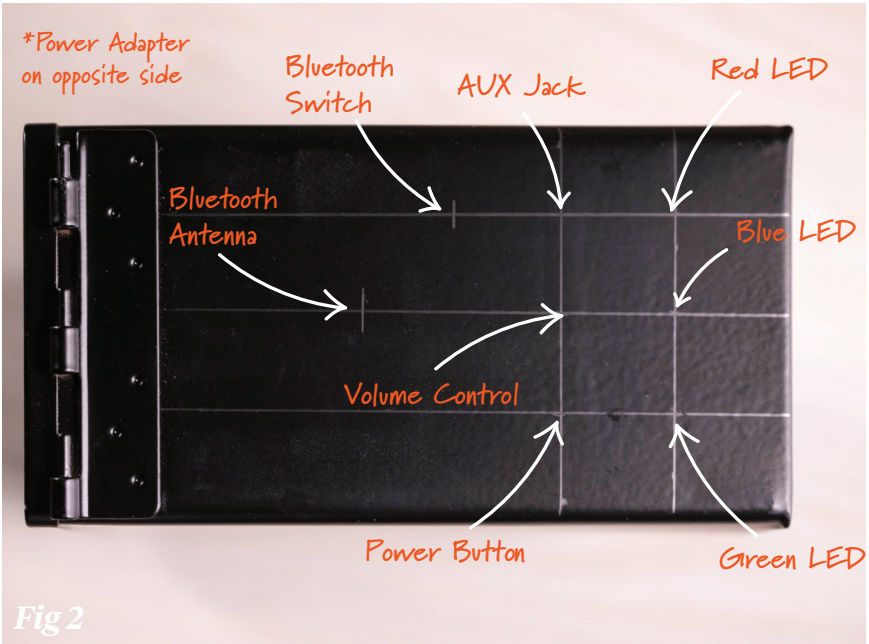
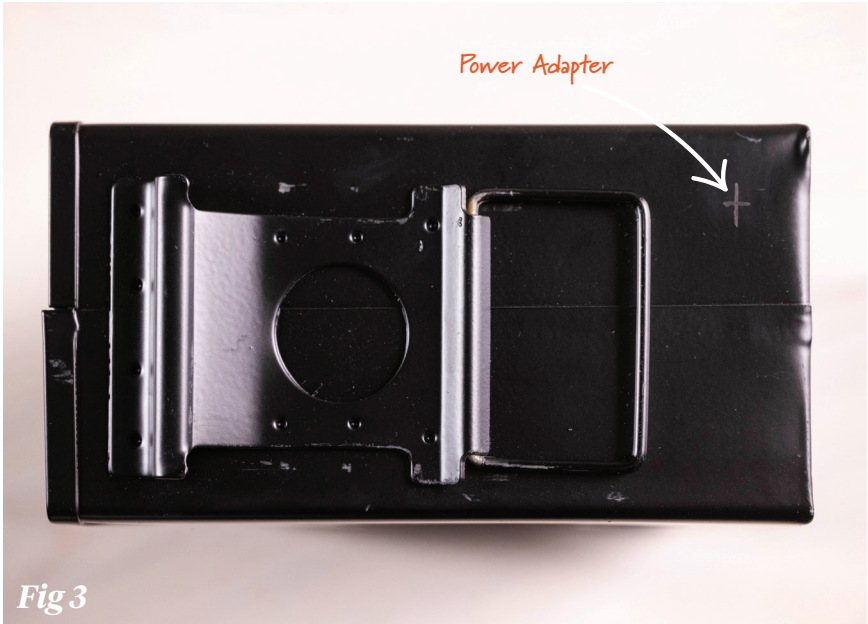


Fig 2

To get started, you'll want to take some time to consider where you want the inputs, LED indicators, and controls to be placed on the ammo can. Keep in mind, the can needs to open, close, and stand upright.



*Fig 3*

**1** Using a pencil and ruler, draw out your desired layout for the inputs, indicators, and controls (Fig 1).

In total, you'll need 9 holes for the following:

- Red LED Indicator
- Bluetooth Antenna
- AUX Jack
- Blue LED Indicator
- On/Off Switch
- Bluetooth Switch
- Green LED Indicator
- Volume Control
- Power Adapter

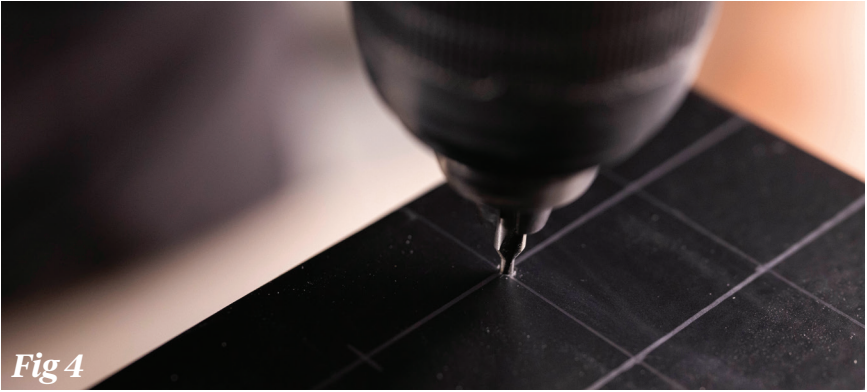
We recommend assigning a color to a specific control, then align them together. Here's our preferred layout (Fig 2,3).

**Pro Tip:**

*For a cleaner layout, place the hole for the power adapter to the opposite side of the ammo can. (Fig 3)*

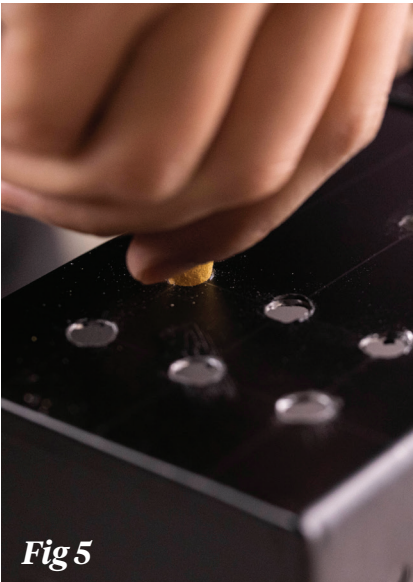
# DRILLING

*Drilling all the holes*



*Fig 4*

- 1** Use clamps or vises to secure the can to a solid surface before drilling the holes. Make sure to wear eye protection.



*Fig 5*

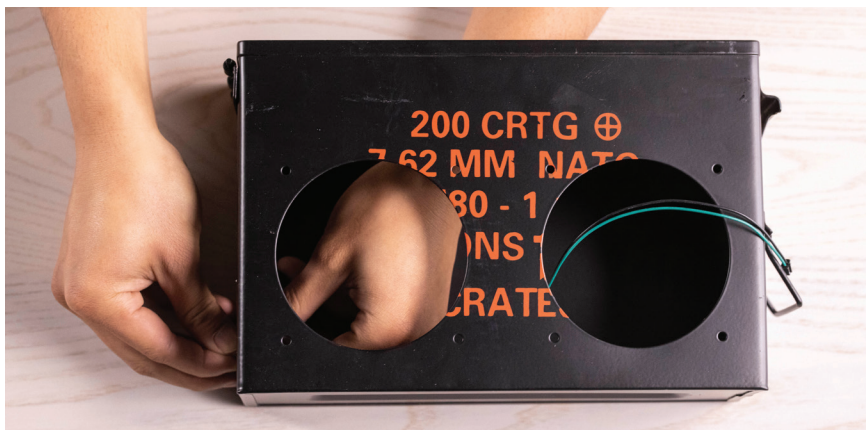


*Fig 6*

- 2** Use the pilot bit to start the hole, then switch to the step drill bit and drill all holes (except the antenna) to **8 mm** (Fig 4). Drill the antenna hole to **6 mm**. Carefully deburr and smooth the holes with sandpaper to the best of your abilities (Fig 5, 6).

# PANEL MOUNTS

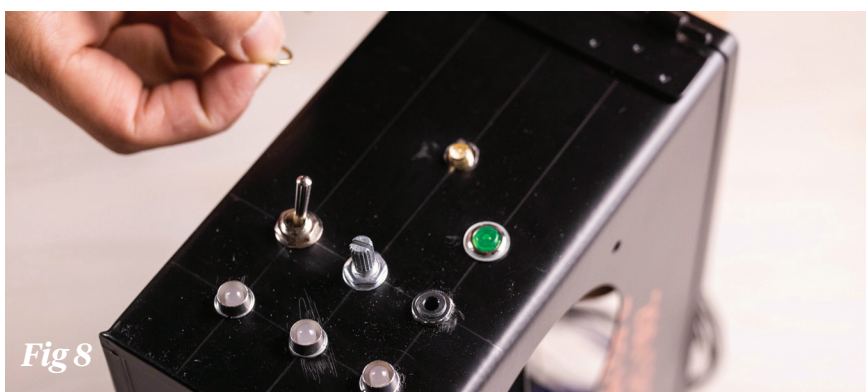
Mounting everything together



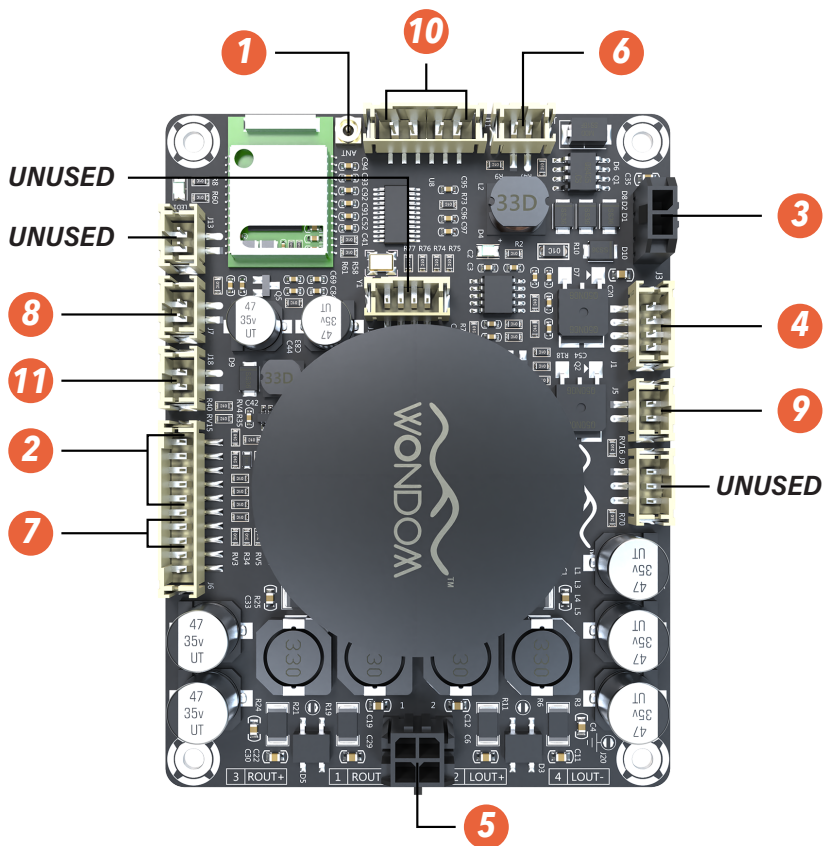
- 1 Next, connect all the panel mounts, starting with the LED lights according to your plan (Fig 7).

## **Pro Tip:**

*The lights tighten from inside the can while other components tighten from the outside. The washer should sit on the outside of the can.*



- 2 Mount the AUX jack, power jack, On/Off switch, bluetooth switch, antenna, and volume control (Fig 8). Follow the diagram on the next page to connect all the wiring to the amp board. Use pliers to tighten all the nuts on the panel mounts.



### **INPUT**

- 1** Bluetooth Antenna
- 2** 3.5mm AUX Jack

### **POWER**

- 3** Power Adapter
- 4** Battery Balance

### **OUTPUT**

- 5** Speakers

### **LED INDICATORS**

- 6** Battery Charging
- 7** Power
- 8** Bluetooth

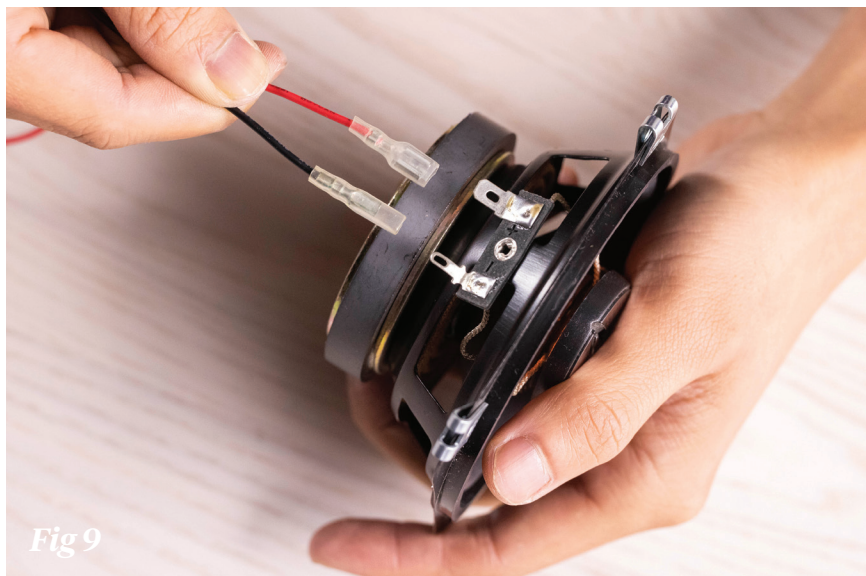
### **CONTROL**

- 9** On/Off Switch
- 10** Volume Control
- 11** Bluetooth Switch



# SPEAKERS

*Connecting and mounting the speakers*



- 1** Before mounting, first connect the speakers to the amplifier. The different sized connectors will ensure correct polarity (Fig 9).





*Fig 11*

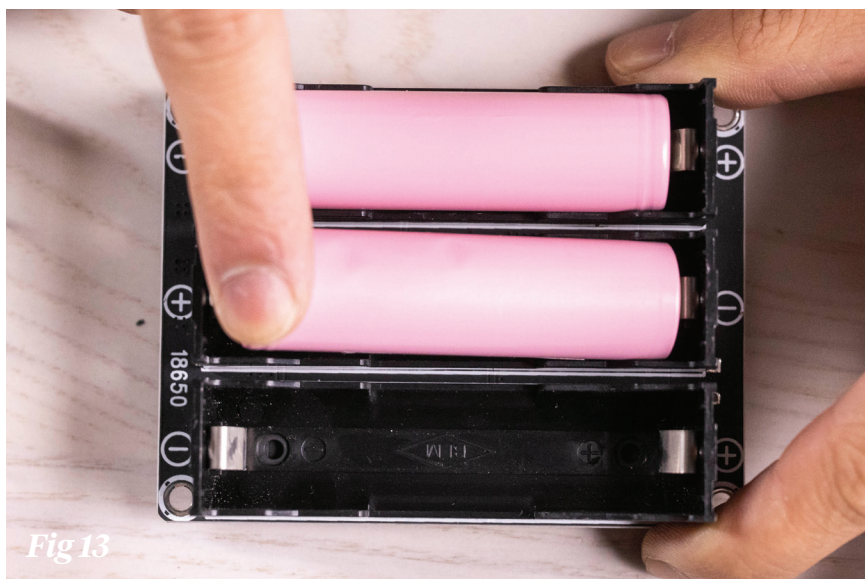
- 2** The pre-drilled holes in the can are designed to mount the speakers from the inside to hide the mounting brackets. First, slip the clamp nuts onto the speakers as shown (Fig 10).
- 3** Then, position the speaker inside the can and carefully tighten all four screws (Fig 11, 12).



*Fig 12*

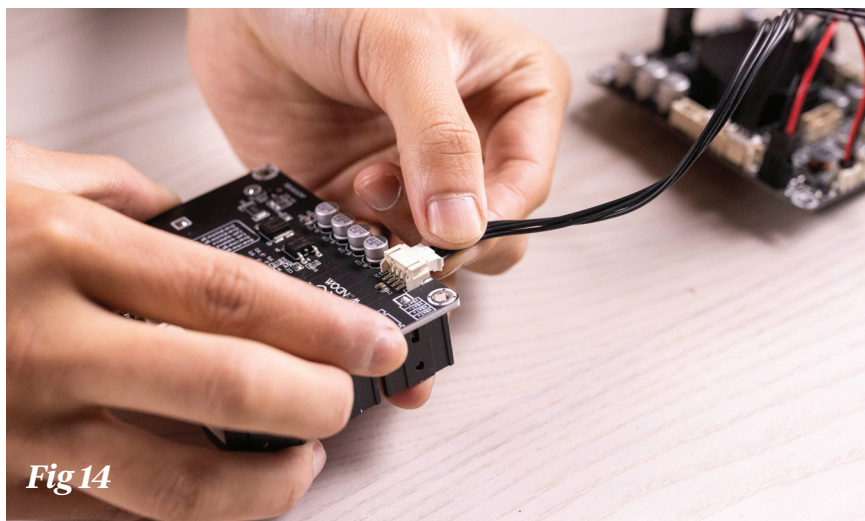
# POWER

Powering it up



*Fig 13*

- 1** Before connecting the battery balance to the board, insert all three batteries, taking care to pair the pluses and match the minuses (Fig 13). Each battery provides 4.2 volts when fully charged. That means the three batteries, when connected in series provide 12.6 volts.



*Fig 14*



Fig 15

- 2 Connect it to the amp board using any of the three battery balance jacks (Fig 14). The final test is to cross your fingers and flip the switch (Fig 15).

### ***Pro Tips:***

*The balance is equipped with overcharge/undercharge protection to extend overall battery life. This keeps the batteries from becoming too powerful because power inevitably corrupts.*

*The smaller battery terminal is the positive end.*

# BLUETOOTH

Connecting your device to your speakers

The JAB-2 amp board is equipped with a Bluetooth 4.0 chip and an I-PEX connector for the exterior antenna. Because we're essentially stowing our Bluetooth chip in a big, metal Faraday Cage, the radio waves will function much more reliably with an accessible antenna.

- 1 Once everything is connected and functioning properly, turn on the speakers. The power light should illuminate, and the bluetooth light should flash. However, if an auxiliary cord is plugged in, Bluetooth will turn off to preserve power.



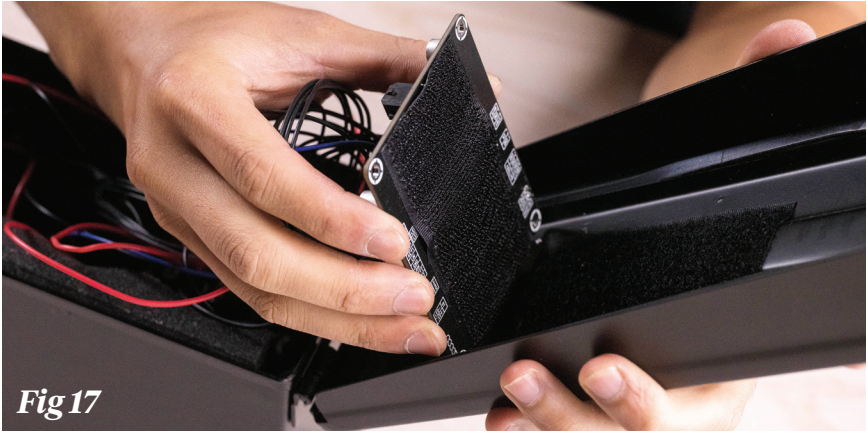
Fig 16

- 2 To establish Bluetooth rendezvous, turn on Bluetooth for your source device and search for potential Bluetooth pairings. The Bluetooth for your speaker is called "Jammunion" (Fig 16).

# CLEANING UP

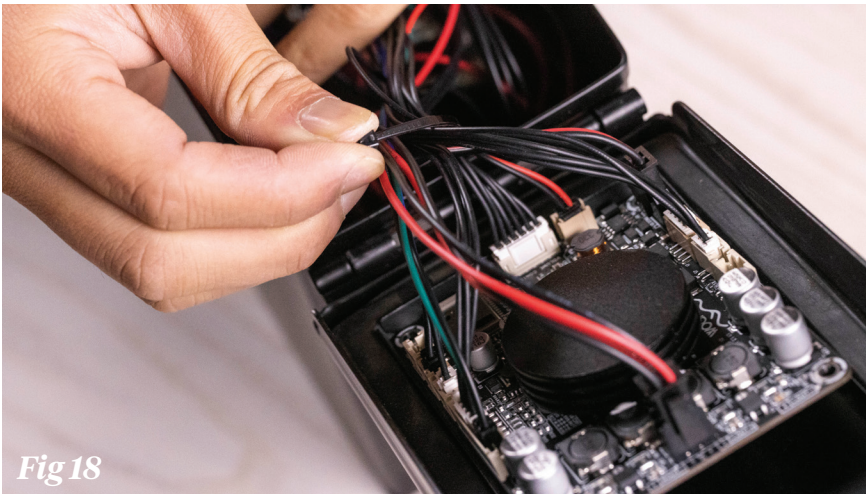
*Getting your speaker road ready*

*You wouldn't go to war with a loosely secured warhead, so wait to adventure with your speaker until you've organized the excess wiring and secured the amplifier board and battery pack in place.*



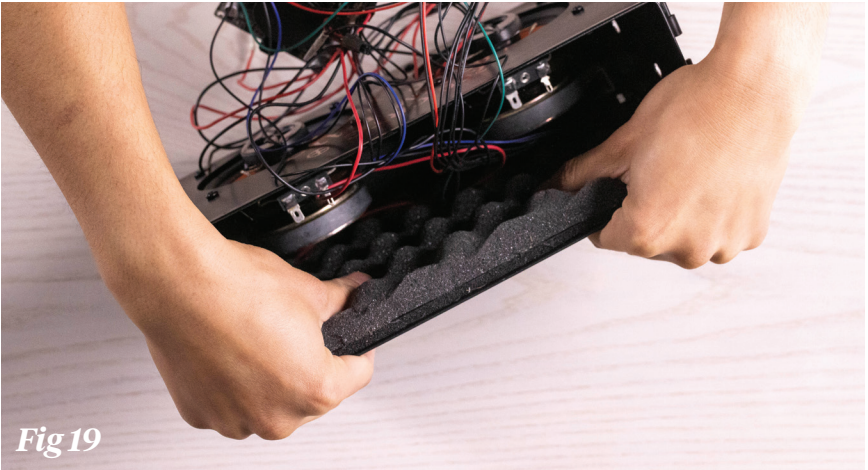
**Fig 17**

- 1** Use the adhesive velcro tape to mount the amp board and battery pack (Fig 17).



**Fig 18**

- 2** Next, use the zip ties to organize and bundle the wires (Fig 18). Ensure nothing gets pinched or stretched when opening and closing the lid.



*Fig 19*

- 3** The packing foam from the box wasn't an afterthought. This "acoustic" foam makes great insulation and improves the sound quality of your can by using science. Cut pieces to size, and use the adhesive backing to mount it to the can walls (Fig 19).



*Fig 20*



*Fig 21*

- 4** Stick on the rubber feet to finish the ensemble (Fig 20). Finally, use a rubber eraser to remove the marks used for planning in step 1 (Fig 21).

# STARTER PLAYLIST

*Tunes to get the party going*

## *The Greatest Decade*

Tasties of the '80s

- "You Make My Dreams" - Hall & Oates
- "Jessie's Girl" - Rick Springfield
- "Blue Monday" - New Order
- "Enjoy The Silence" - Depeche Mode
- "Take On Me" - a-ha
- "That's All" - Genesis
- "Hungry Like The Wolf" - Duran Duran
- "Sunglasses At Night" - Corey Hart
- "Broken Wings" - Mr. Mister

## *Brace for knee weakening*

- "Your Love" - The Outfield
- "Careless Whisper" - George Michael
- "I Want To Know What Love Is" - Foreigner
- "Careless Whisper" - George Michael
- "The Power Of Love" - Huey Lewis and the News
- "Can't Fight This Feeling" - REO Speedwagon
- "In Your Eyes" - Peter Gabriel
- "Careless Whisper" (on repeat) - George Michael



# TROUBLESHOOTING

Answers to some FAQs

## ***The battery balance is connected, but it isn't powering the speakers.***

First, ensure that the batteries are connected in the correct orientation. Ya, doy, we know, but you'd be surprised. The batteries are either not connected properly or simply need to charge. If any battery is producing under 2 V, then it likely needs to be replaced.

## ***How do I charge my speakers?***

Once everything is connected and the batteries are installed, plug it into the wall adapter. The adapter will provide enough power to use the speakers and charge the batteries at the same time. The charging light should flash when batteries are charging.

## ***I don't have a drill, how do I make holes in the can?***

This probably isn't something we can help you with. Fortunately, you can get by with a little help from your friends. Try rubbing shoulders with someone who has an impressive collection of tools. Think of it as an opportunity to work on that "networking" stuff you've been hearing so much about.

## ***It was working fine, then I dropped it, and it stopped working!***

Connections can come loose due to vibrations, sudden impacts, or child sabotage. Open the can and ensure all connections are intact and wires are not corroded.

## ***What is the standby time for Battery Mode?***

Standby time is about 48 hours if the switch is left on.

## ***What is the play time for Battery Mode?***

About 4–6 hours, but this can vary depending on Bluetooth use and volume.



Showcase your creation at  
[facebook.com/mancrates](https://facebook.com/mancrates),



or find us on Instagram:  
[@mancrates](https://instagram.com/mancrates)

*Lure Making Kit*



*Pinecone Bowie Kit*



*Home Brewing Kit*



*Watch Making Kit*



*Man Crates Project Kits harken back to that honorable, do-it-yourself era. We pack all the gear and guidance for hours of fun. You'll just need to bring the elbow grease. See all the kits we offer at [www.mancrates.com](http://www.mancrates.com).*

**MAN  
CRATES**



[MANCRATES.COM/PROJECTS](http://MANCRATES.COM/PROJECTS)