





Thanks for purchasing this printable dice tower from

# LEGIONTERRAIN.COM

We're a small company, made up of 2 gamers who wanted to put more story on the tabletop.

This piece was really a labor of love. It was one of our first designs and the V1 tower still sees action whenever dice are being rolled.

But here it is. Ready for you to build and glue and paint and enjoy.

## USAGE RIGHTS

**With your purchase**, you're licensed to print yourself ONE WORKING COPY of this tower. Don't share the files or upload them anywhere someone else could gain access. Don't print extras for other people. Don't give the files to anyone else in any way. If you need to transfer them temporarily to a friend or printing service for the purpose of printing YOUR one working copy, you have permission to do so. That entity does not gain any rights to use, modify, distribute, or do anything other than print ONE WORKING COPY of this tower.

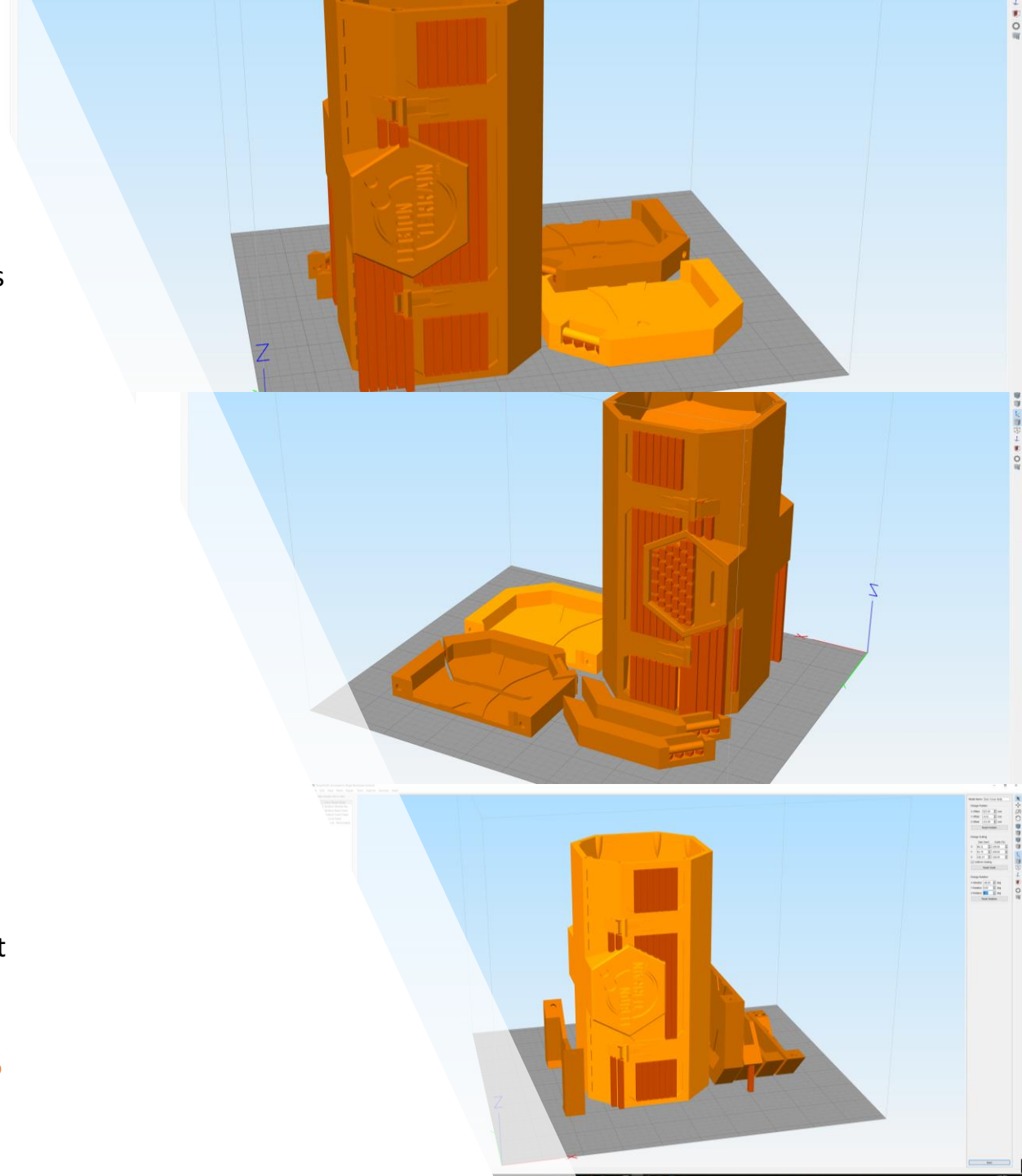
**If by some chance, you came by these STL files without paying LegionTerrain...** we understand the sharing culture. But we made this to sell – and sell cheap. Our price for this model is reasonable and we hope you'll take a minute to jump to <http://legionterrain.com> and buy a legitimate copy of the files to encourage us to keep at it.

Thanks!

Rob & Jason

# Printing Advice

- **TEST FIRST:** Make sure your magnets fit in the holes. Our tolerance should work with most filaments and most magnets. You can test this by printing the Top Front Mount first. If you have issues with filament/printer tolerances, contact LegionTerrain for a kit with a broader opening.
- **Print the tower vertically if possible**
  - The tower will look best if printed vertically.
  - If your printer lacks the vertical height, try horizontally or slice it where it suits you.
  - REMOVABLE TOP TRAY pieces may either be printed laying flat or standing vertically as shown.
- **MINIMIZE SUPPORTS:**
  - Some supports will be needed along the outside
  - See the sample photos to the right for our support layouts
  - Using PLA, the internal ramps are designed to print without supports, but your filament and printer will vary. Use your experience as a guide.
  - Adjust infill to your preferences but use at least 10% to prevent cracking as dice bounce around inside the tower.
- **DO NOT PAINT PARTS BEFORE INSTALLING MAGNETS**

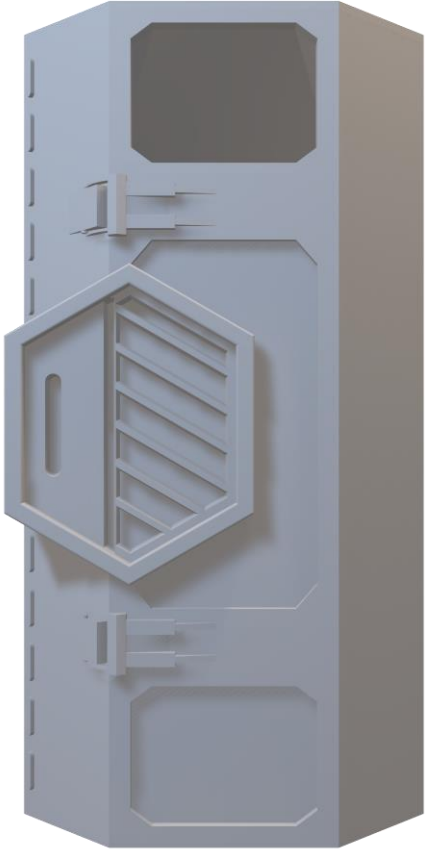


# Get Ready

REMOVABLE TOP TRAY



Top Front Mount ( fixed )



Dice Tower Body

Bottom Rear Mount (fixed)



Bottom Front Mount (fixed)



Smooth sand paper,  
OR craft file



Craft Stick(s)

**A supply of EPOXY or similar GLUE.**

**Note: Super glues are not always effective.**



20x  
4mm x 2mm disc magnets

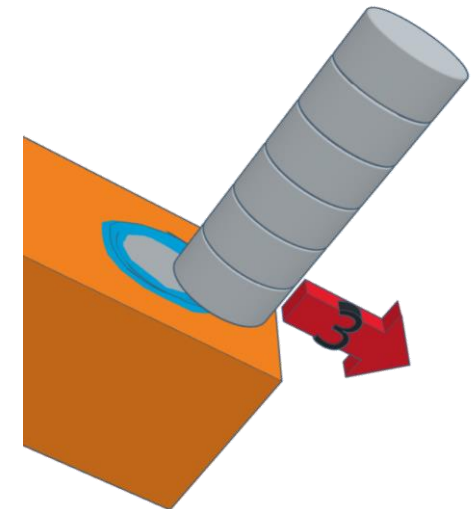
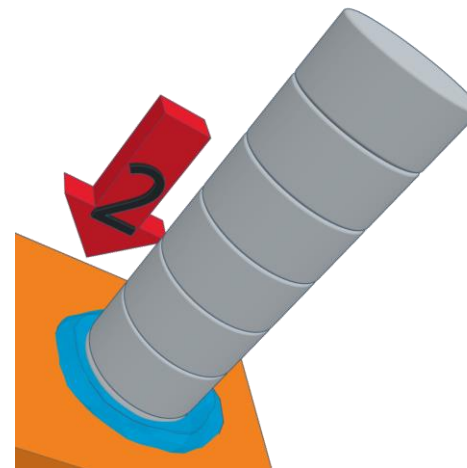
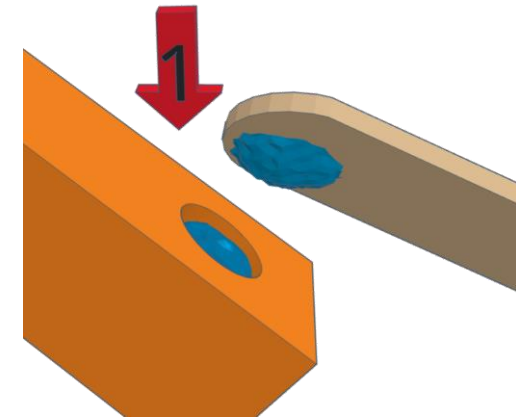
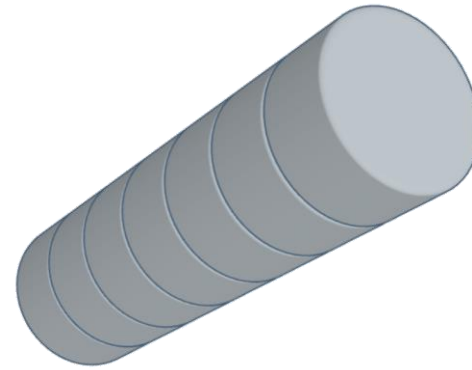
# Things to know

- **TEST FIRST:** Make sure your magnets fit in the holes. Our tolerance should work with most filaments and most magnets. You can test this by printing the Top Front Mount first. If you have issues with filament/printer tolerances, contact LegionTerrain for a kit with a broader opening. Having a little extra room in the magnet slots is acceptable, it will be filled by epoxy.
- **DO NOT INSTALL MAGNETS OUT OF ORDER**
  - You'll learn my best practice to avoid misaligned magnets.
  - This will require patience.
  - Following the right sequence will save you from digging a misaligned magnet out of the model.
- **CHECK FOR WARP:** If you printed your dice tower yourself, make sure none of the parts are warped.
- **KNOW YOUR ADHESIVE:** Epoxies, resins, and other adhesives can be dangerous. Follow all manufacturer safety and handling instructions.

# Reference procedure for installing **PRIMARY** magnets

Follow **ALL** manufacturer safety instructions when working with adhesives.

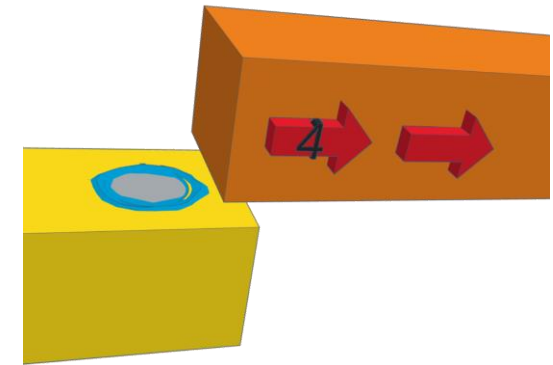
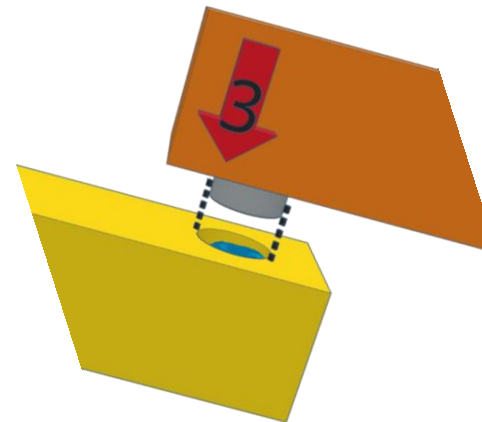
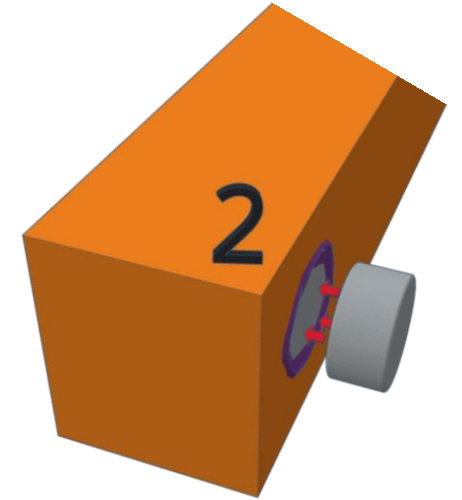
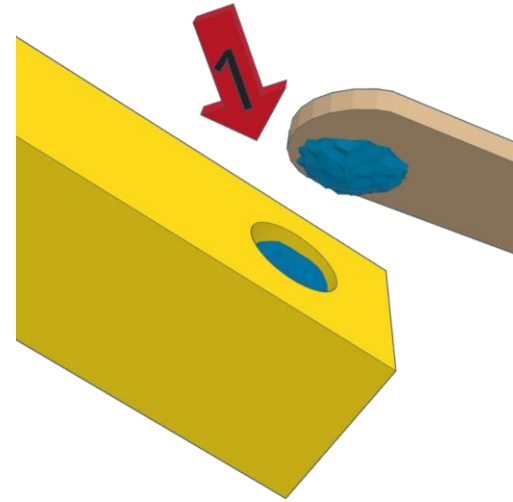
- When installing initial magnets, it is useful to **use the stack** of 4mm X 2mm disc magnets as a sort of tool.
- Hold the “stick” of magnets between two fingers so that you always press magnets into the opening **IN THE SAME DIRECTION** (except where instructed otherwise).
- **ONLY WHEN INSTRUCTED** for each magnet slot...
  1. Insert a little epoxy in the slot
  2. Press the magnet into the slot
  3. Slide the stack of magnets horizontally holding the installed magnet in place if necessary.



## Reference procedure for installing **SECONDARY** magnets

Follow ALL manufacturer safety instructions when working with adhesives.

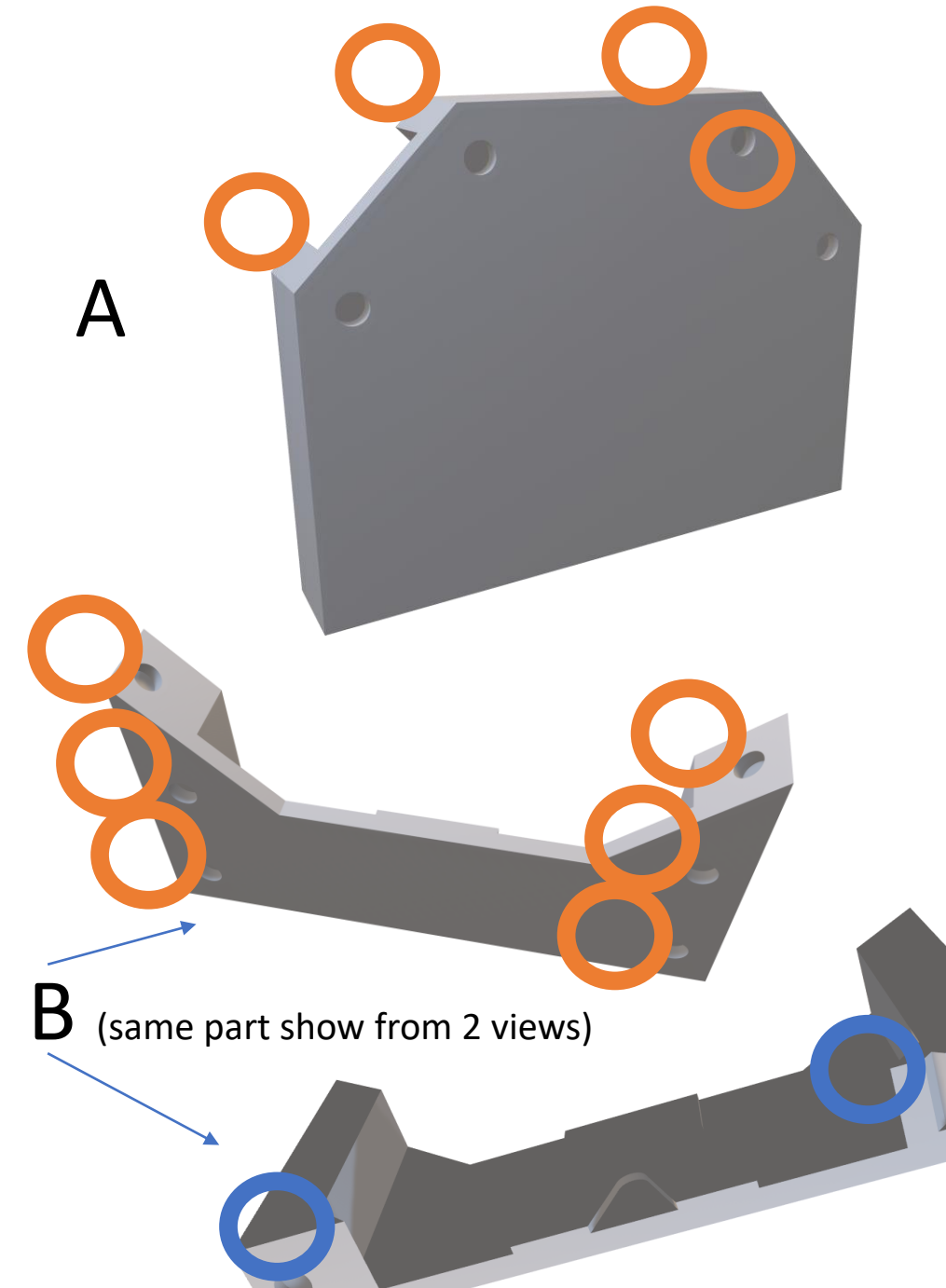
- After the **primary magnets** are installed and epoxy is totally dried, use the primary parts as installation tools for **secondary magnets**. This will help avoid misaligned magnets.
- **IN THE ORDER INSTRUCTED** below, for each magnet slot...
  1. Insert a little epoxy in the **new slot**
  2. Allow a loose magnet to “attach” to the previously **installed** magnet on the **primary part**. **DO NOT GLUE THIS MAGNET TO THIS PART.**
  3. Align the **primary part** with the **secondary part**. Press the loose magnet into the new slot.
  4. Slide the two parts away from each other so that the new **secondary** magnet stays in the **secondary** part.



# Step 1 - Primary magnets

Follow ALL manufacturer safety instructions when working with adhesives.

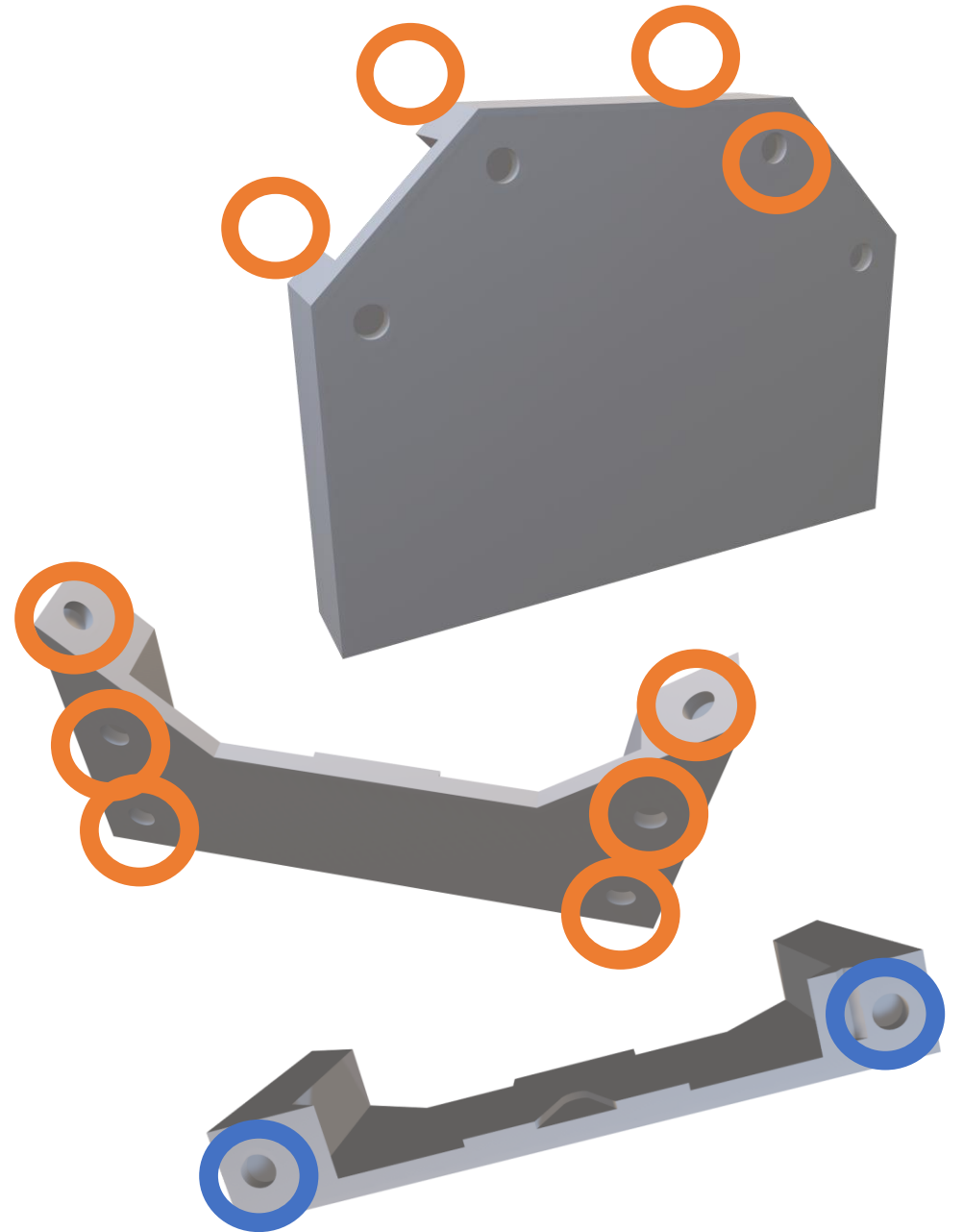
1. Using the **Primary Magnet Installation Procedure**, install 4 indicated magnets in the underside of the REMOVABLE TOP TRAY (A). *Do not install the two additional magnets in the side of this tray at this time.*
2. Using the **Primary Magnet Installation Procedure**, install 6 magnets in the REMOVABLE JOINING TRAY (B).
3. **Optional - Reverse your magnet installation stack** for the last two magnets (indicated in blue). Using the **Primary Magnet Installation Procedure**, install the last 2 magnets in the REMOVABLE JOINING TRAY (B).
4. Ensure that the magnets are flush with the outer surface of the model before the epoxy begins to set.
5. Wipe away any excess epoxy before it hardens.



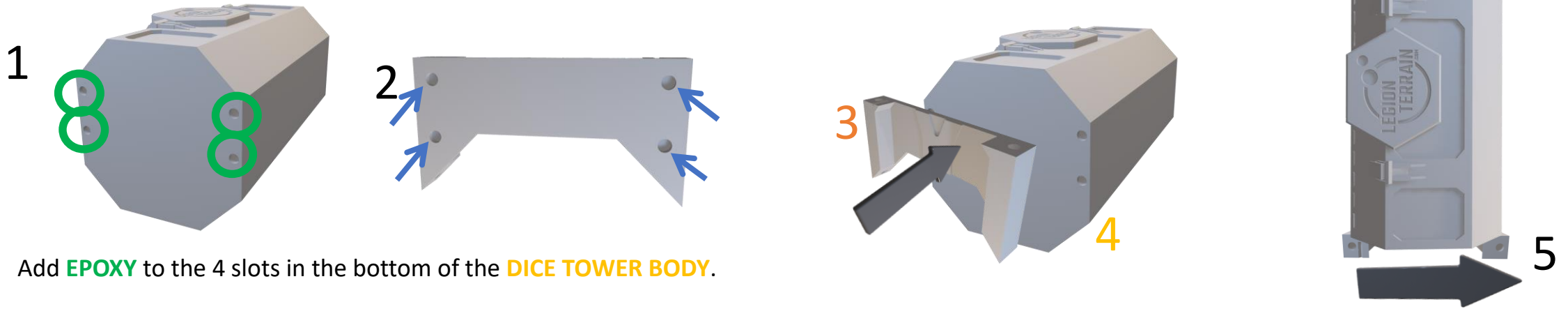


## Step 2 – WAIT & SAND

1. Wait for all epoxy or glue to set/harden based on manufacturer's instructions.
2. Seriously. WAIT.
3. Moving too quickly through the remaining steps could cause misaligned magnets, which could result in a ruined print.
4. So wait. You'll be glad you did.
5. **If necessary, sand off extra epoxy once all epoxy has hardened fully.**
6. **These two primary components will become the tools which you use to install magnets in all the secondary components.**

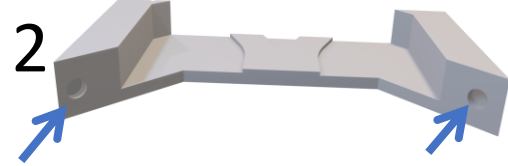


# Step 3 – Secondary Magnets Tray-to-Body Bottom



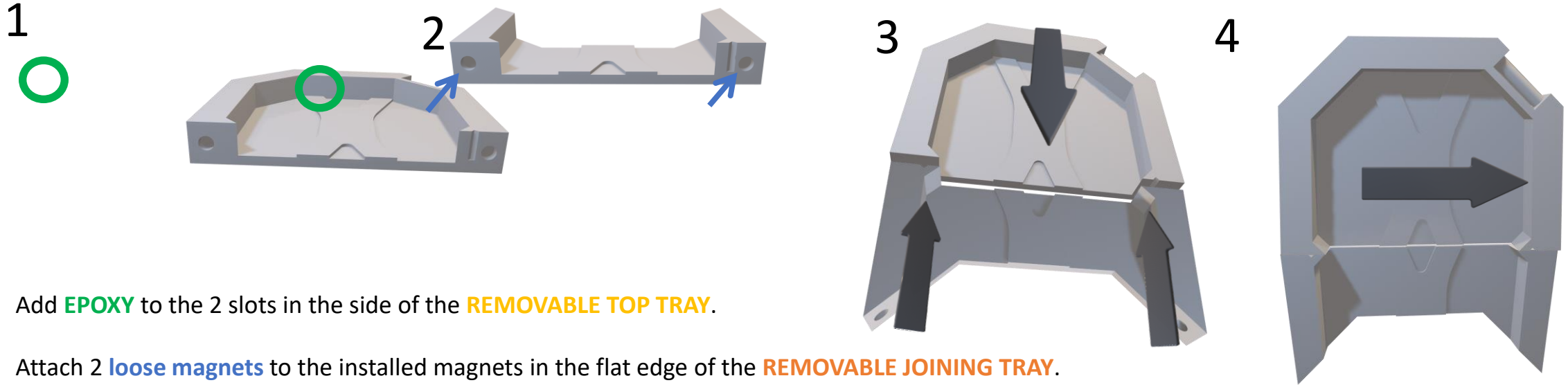
1. Add **EPOXY** to the 4 slots in the bottom of the **DICE TOWER BODY**.
2. Attach 4 **loose magnets** to the installed magnets in the bottom of the **REMOVABLE JOINING TRAY**.
3. **Important, align the REMOVABLE JOINING TRAY so that the pointed ends are closest to the dice tower opening and the flat edge is near the back of the dice tower.**
4. Before the epoxy begins to set, use the **REMOVABLE JOINING TRAY** to align and press the loose magnets into the **DICE TOWER BODY**. **In this case, you might have to do one magnet at a time.**
5. Slide the two parts away from each other so that the new loose magnets stay in place in the new slots.
6. **Do not leave the two pieces connected while the new epoxy sets.**
7. If needed, using a non-metallic item like a craft stick, compress the new magnets so that they are flush into the slots.
8. Wipe off excess epoxy from all parts.

# Step 4 – Secondary Magnets Tray-to-Tray Bottom



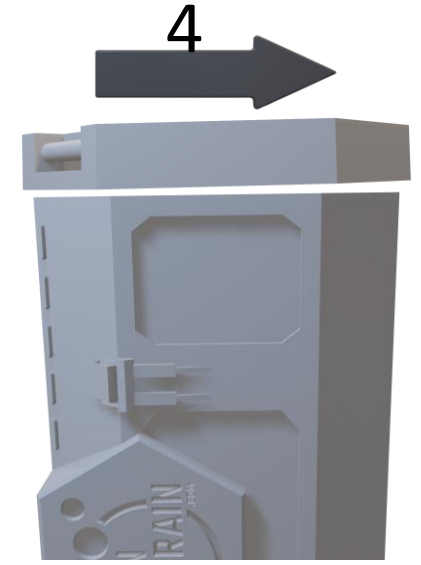
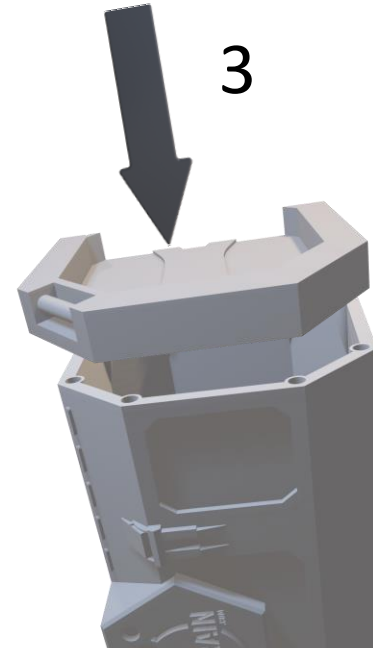
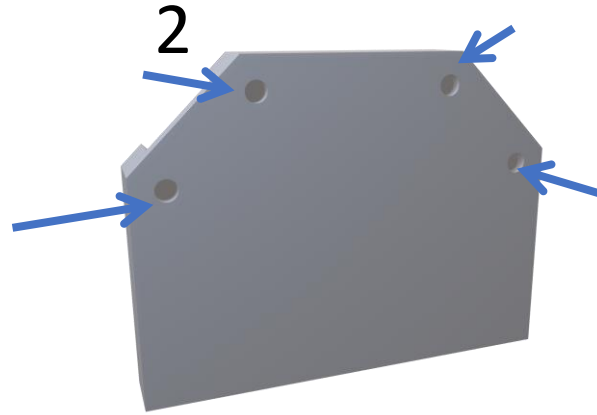
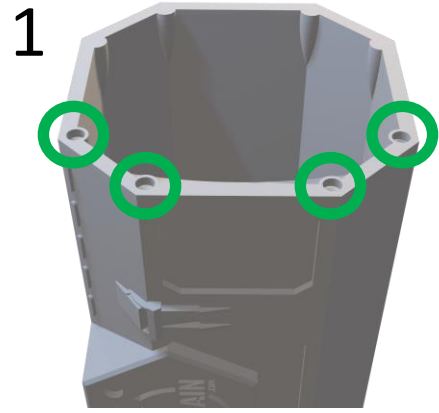
1. Add **EPOXY** to the 2 slots in the bottom of the **BOTTOM FRONT MOUNT**.
2. Attach 2 **loose magnets** to the installed magnets in the pointed edge of the **REMOVABLE JOINING TRAY**.
3. **Important**, align the **REMOVABLE JOINING TRAY FACE UP** so that the pointed ends are closest to the **BOTTOM FRONT MOUNT** which must be **FACE DOWN**.
4. Before the epoxy begins to set, use the **REMOVABLE JOINING TRAY** to align and press the loose magnets into the **BOTTOM FRONT MOUNT**. **In this case, you might have to do one magnet at a time.**
5. Slide the two parts away from each other so that the new loose magnets stay in place in the new slots.
6. **Do not leave the two pieces connected while the new epoxy sets.**
7. If needed, using a non-metallic item like a craft stick, compress the new magnets so that they are flush into the slots.
8. Wipe off excess epoxy from all parts.

# Step 5 – Secondary Magnets Removable Trays



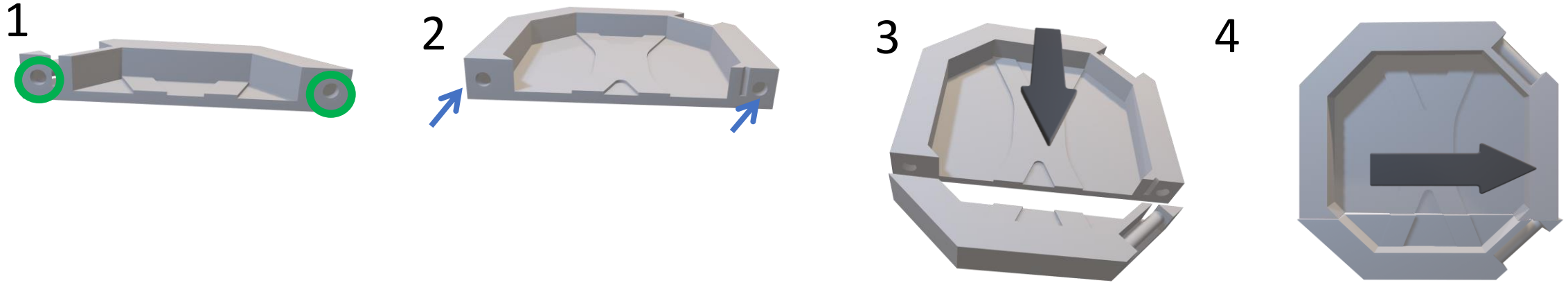
1. Add **EPOXY** to the 2 slots in the side of the **REMOVABLE TOP TRAY**.
2. Attach 2 **loose magnets** to the installed magnets in the flat edge of the **REMOVABLE JOINING TRAY**.
3. Before the epoxy begins to set, use the **REMOVABLE JOINING TRAY** to align and press the loose magnets into the **REMOVABLE TOP TRAY**. **In this case, you might have to do one magnet at a time.**
4. Slide the two parts away from each other so that the new loose magnets stay in place in the new slots.
5. **Do not leave the two pieces connected while the new epoxy sets.**
6. If needed, using a non-metallic item like a craft stick, compress the new magnets so that they are flush into the slots.
7. Wipe off excess epoxy from all parts.

# Step 6 – Secondary Magnets Tray-to-Body Top



1. Add **EPOXY** to the 4 slots in the bottom of the **DICE TOWER BODY**.
2. Attach 4 **loose magnets** to the installed magnets in the bottom of the **REMOVABLE TOP TRAY**.
3. **Important, align the REMOVABLE TOP TRAY so that the magnets align with the new slots on the DICE TOWER BODY.**
4. Before the epoxy begins to set, use the **REMOVABLE TOP TRAY** to align and press the loose magnets into the **DICE TOWER BODY**. **In this case, you might have to do one magnet at a time.**
5. Slide the two parts away from each other so that the new loose magnets stay in place in the new slots.
6. **Do not leave the two pieces connected while the new epoxy sets.**
7. If needed, using a non-metallic item like a craft stick, compress the new magnets so that they are flush into the slots.
8. Wipe off excess epoxy from all parts.

# Step 7 – Secondary Magnets Tray-to-Tray Top

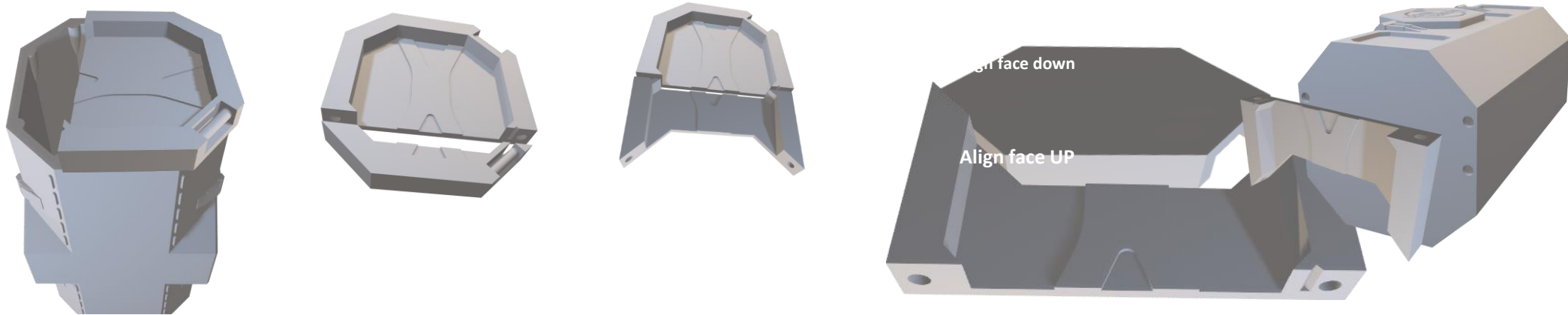


1. Add **EPOXY** to the 2 slots in the side of the **TOP FRONT MOUNT**.
2. Attach 2 **loose magnets** to the installed magnets in the flat edge of the **REMOVABLE TOP TRAY**.
3. Before the epoxy begins to set, use the **REMOVABLE TOP TRAY** to align and press the loose magnets into the **TOP FRONT MOUNT**. *In this case, you might have to do one magnet at a time.*
4. Slide the two parts away from each other so that the new loose magnets stay in place in the new slots.
5. **Do not leave the two pieces connected while the new epoxy sets.**
6. If needed, using a non-metallic item like a craft stick, compress the new magnets so that they are flush into the slots.
7. Wipe off excess epoxy from all parts.

# Step 8 – WAIT & SAND

1. Wait for all epoxy or glue to set/harden on ALL PARTS based on manufacturer's instructions.
2. Seriously. WAIT.
3. Moving too quickly through the remaining steps could cause misaligned components, which could result in a ruined print.
4. So wait. You'll be glad you did.
5. **If necessary, sand off extra epoxy once all epoxy has hardened fully.**
6. The remaining parts will be installed after these magnets are totally sealed in and glue or epoxy is totally hardened.

# Step 9 – Pre-flight Magnet Test

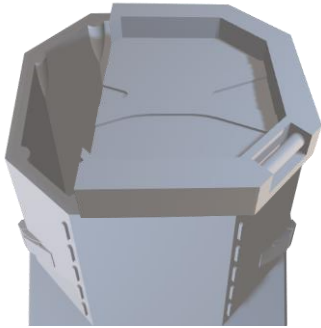


1. Test all magnetic alignment before attaching fixed components
2. If a magnet was installed incorrectly, you may be able to remove it with a craft knife – or you may need to reprint a part and install new magnets.
  - **If required, it is best to remove/reinstall magnets from the underlined components below.**
3. Test the following connections.
4. REMOVABLE TOP TRAY to DICE TOWER BODY top
5. REMOVABLE TOP TRAY to TOP FRONT MOUNT
6. REMOVABLE TOP TRAY to REMOVABLE JOINING TRAY – an error on one of these components affects multiple other components.
7. REMOVABLE JOINING TRAY to BOTTOM FRONT MOUNT – *with alignment as shown above.*
8. REMOVABLE JOINING TRAY to DICE TOWER BODY bottom – *with points facing the open hole side of the dice tower.*

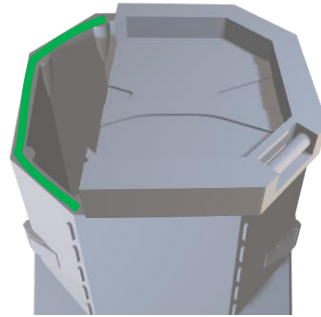


# Step 10 – Installing TOP fixed components

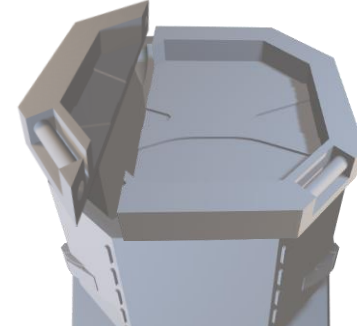
1-2



3



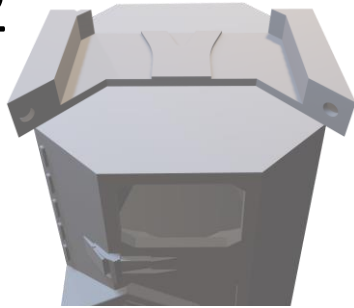
4



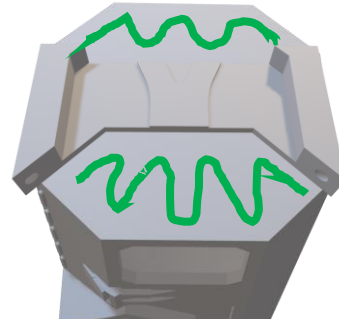
1. **Test magnet alignment before proceeding.**
  - All magnets in the top 3 components should connect without resistance.
  - If a magnet is resisting another magnet, try to avoid removing magnets from the **REMOVABLE TOP TRAY**.
2. Allow magnets to attract **REMOVABLE TOP TRAY** to the top of the **DICE TOWER BODY**.
  - Before proceeding, verify that both magnets on the **TOP FRONT MOUNT** will attach without resistance to the **REMOVABLE TOP TRAY**.
  - These two parts will create a reference point for the installation of the **TOP FRONT MOUNT**
3. Mix and apply a conservative amount of epoxy to the indicated exposed area at the top of the **DICE TOWER BODY** but do not get any on the **REMOVABLE TOP TRAY**
4. Using the magnetically connected **REMOVABLE TOP TRAY** as a reference...
  - Align and attach the **TOP FRONT MOUNT** to the **DICE TOWER BODY**
  - Ensure that it aligns nicely before pressing it down on the epoxy
  - Do not move the **REMOVABLE TOP TRAY** during the alignment process.
  - Press it firmly into the epoxy without sliding it/smearing the epoxy.
7. Allow epoxy to set, binding the **TOP FRONT MOUNT** permanently to the **DICE TOWER BODY**.

# Step 11 – Installing BOTTOM fixed components

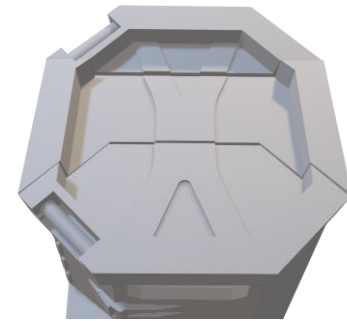
1-2



3



4



1. **Test magnet alignment before proceeding.**
  - All magnets in the bottom components should connect without resistance.
  - If a magnet is resisting another magnet, try to avoid removing magnets from the **REMOVABLE JOINING TRAY**.
2. Allow magnets to attract **REMOVABLE JOINING TRAY** to the bottom of the **DICE TOWER BODY**, with the points facing the dice opening on the front of the model, as shown in the figure above.
  - These two parts will create a reference point for the installation of the **BOTTOM FRONT MOUNT** and the **BOTTOM REAR MOUNT**.
3. Mix and apply a conservative amount of **EPOXY** to the indicated exposed area at the top of the **DICE TOWER BODY** but do not get any on the **REMOVABLE JOINING TRAY**
4. Using the magnetically connected **REMOVABLE JOINING TRAY** as a reference...
  - Align and attach the **BOTTOM FRONT MOUNT** and the **BOTTOM REAR MOUNT** to the **DICE TOWER BODY**
  - Ensure that it aligns nicely before pressing it down on the epoxy
  - Do not move the **REMOVABLE JOINING TRAY** during the alignment process.
  - Press it firmly into the epoxy without sliding it/smearing the epoxy.
  - **IMPORTANT: Leave a small gap between the 3 parts so that the REMOVABLE JOINING TRAY does not become trapped between the two fixed components.**
7. Allow epoxy to set, binding the **TOP FRONT MOUNT** permanently to the **DICE TOWER BODY**.