



HOW TO PRINT *MAG DRIVE*

General printing parameters:

- Nozzle diameter = 0.4
- Flow = Standard
- Layer = 0.20mm
- Sparse infill density = 10%
- NO support

MAGNETS = 6x2 mm



PRO TIP: If you use a slicer other than Bambu Studio, I highly recommend downloading it just to open this file. Explaining how to correctly print all these parts in writing would be nearly impossible! By opening the 3MF file in Bambu Studio, you can inspect my exact setup—including orientation, color placement, infill, seam alignment, and print settings—to guarantee a high-quality result.

PRO TIP: Do not move, rearrange, or delete any of the build plates, as this will completely mess up my custom print settings!



A Massive, Expanding Project! With 45 unique parts already included, this project is constantly growing and already allows you to build an incredible variety of vehicles!

Here is what's available right now:

- **4 Different Car Frames**
- **3 Wheel Types:** On-road, off-road, and train wheels.
- **3 Front Cabin Styles:** Car, pickup truck, and semi-truck.
- **Endless Rear Attachments:** Small and medium containers, dump beds, open or closed boxes, and more.
- **Train Components:** Coal cars, diesel tankers, passenger cars, and much more.

This is a long-term project! In future updates, I will be releasing new parts for cars, heavy-duty/special vehicles, trains, and who knows what else! Plus, I'll be adding external cargo items like logs, concrete blocks, and road signs.

Assembly & Printing Instructions:

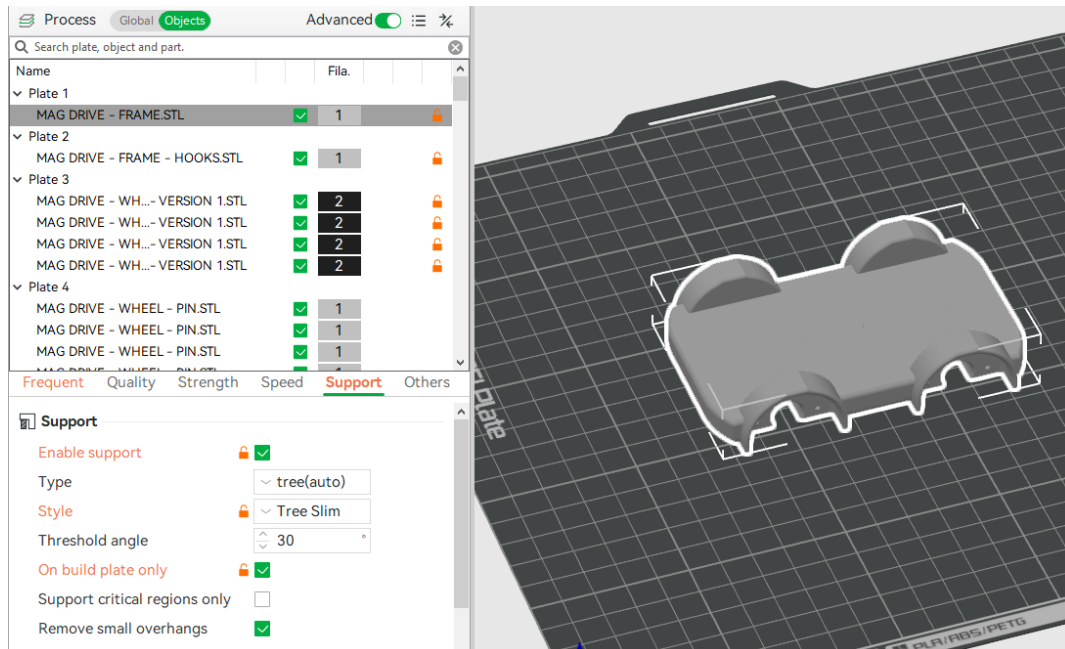
- **Single-Color Parts:** All individual details (doors, windows, custom badges, etc.) are meant to be printed separately in single colors and glued together during final assembly.
- **Magnetic Modular System:** The main modules snap together using **6x2mm magnets**. *Note: I highly recommend using high-quality magnets. Low-quality magnets won't hold the pieces together, resulting in wasted time and filament!*

This guide will walk you through printing the core components to help you understand the assembly logic. Once you grasp the basic concept, every other part follows the exact same process.

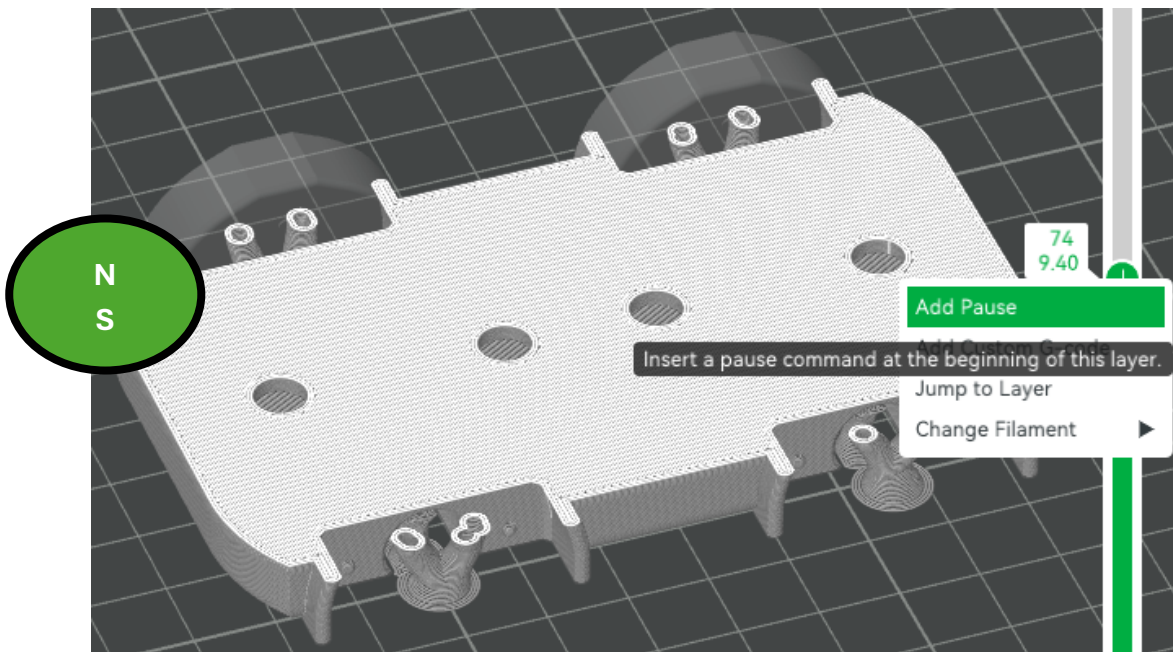


The Car Frame

The core component of this project is the car frame, which is available in four different types. For the best results, I highly recommend enabling supports to ensure maximum print quality and perfect circular holes.



You will need to add a print pause just before the magnet pockets close so you can insert the 6x2mm magnets.



I suggest placing a drop of superglue into the hole, positioning the magnets, waiting a few seconds for the glue to set, and then resuming the print. This



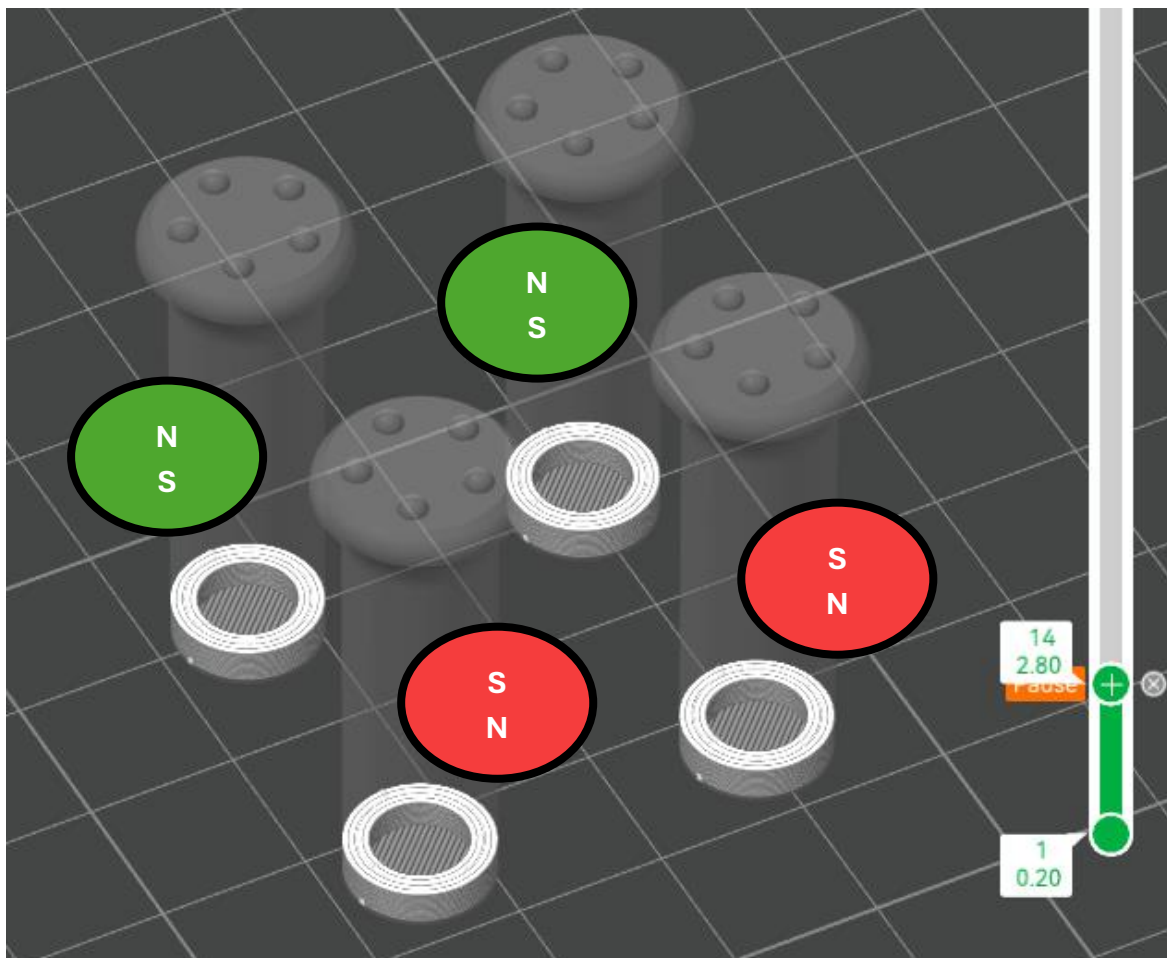
process will completely trap the magnets inside the 3D-printed part, eliminating any risk of them coming loose and being swallowed by a child.

CRITICAL WARNING: If you are printing multiple frames, make sure the magnets in every single frame are oriented in the exact same direction! Otherwise, some components will attract while others repel, ruining the modularity. Please pay close attention to this step!

Wheel Pins

The wheels are mounted onto pins that connect to each other magnetically inside the chassis. Just like with the frames, you will need to add a print pause to insert the magnets.

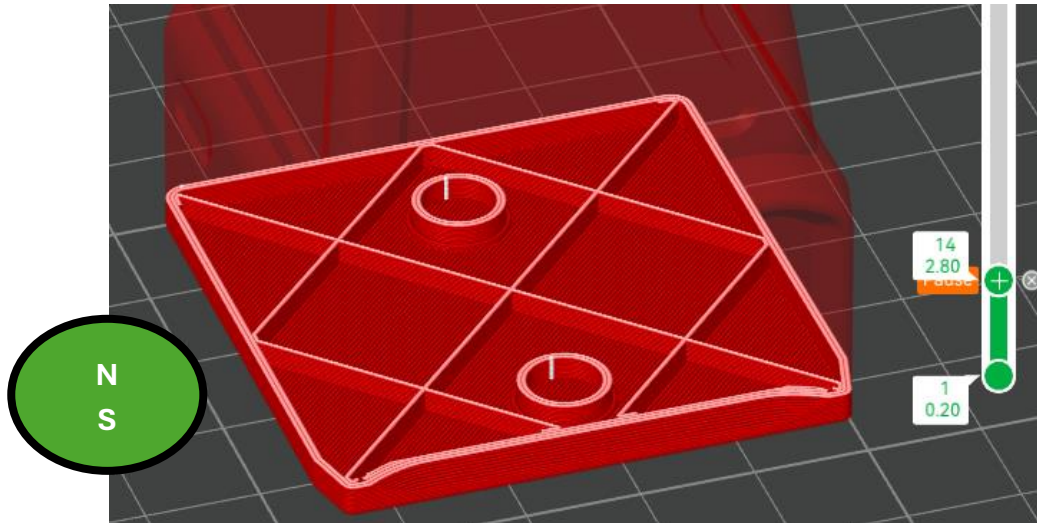
Important Note on Polarity: For the pins, you must insert the 6x2mm magnets with opposite orientations—two facing one way and two facing the other. This ensures that when you slide the pins into the chassis from both sides, they will magnetically attract and snap tightly together!





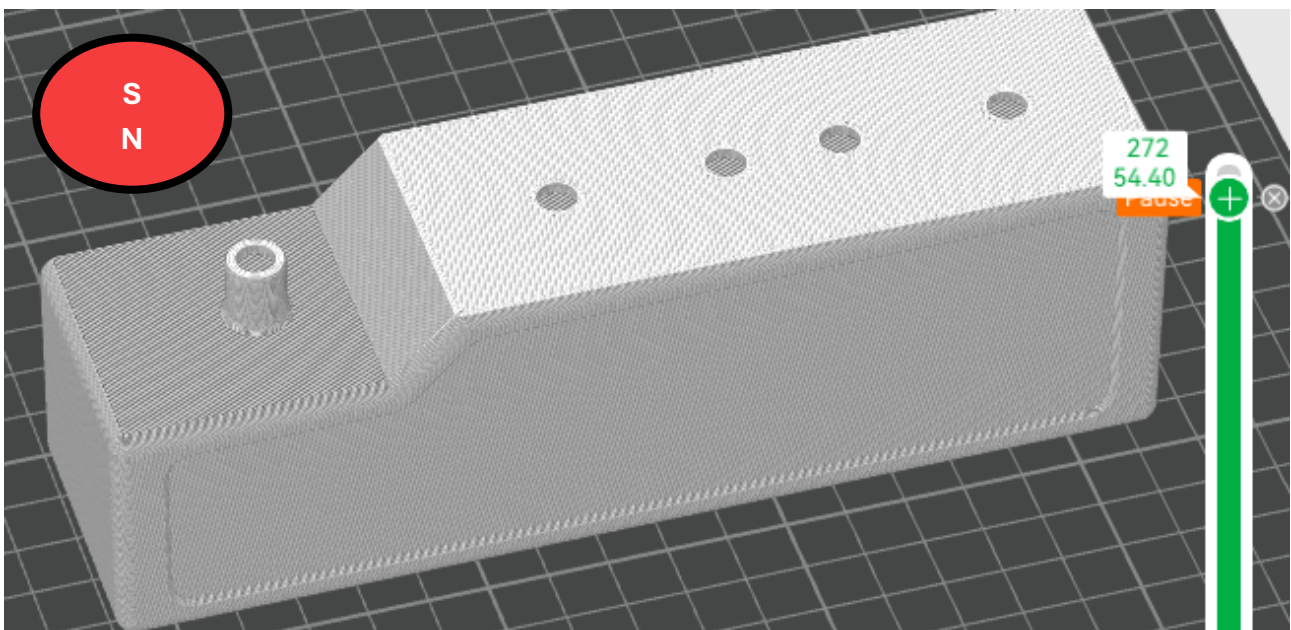
Top Components & Attachments

All components that attach to the top of the chassis must have their 6x2mm magnets oriented in the exact same direction as the ones in the frame.



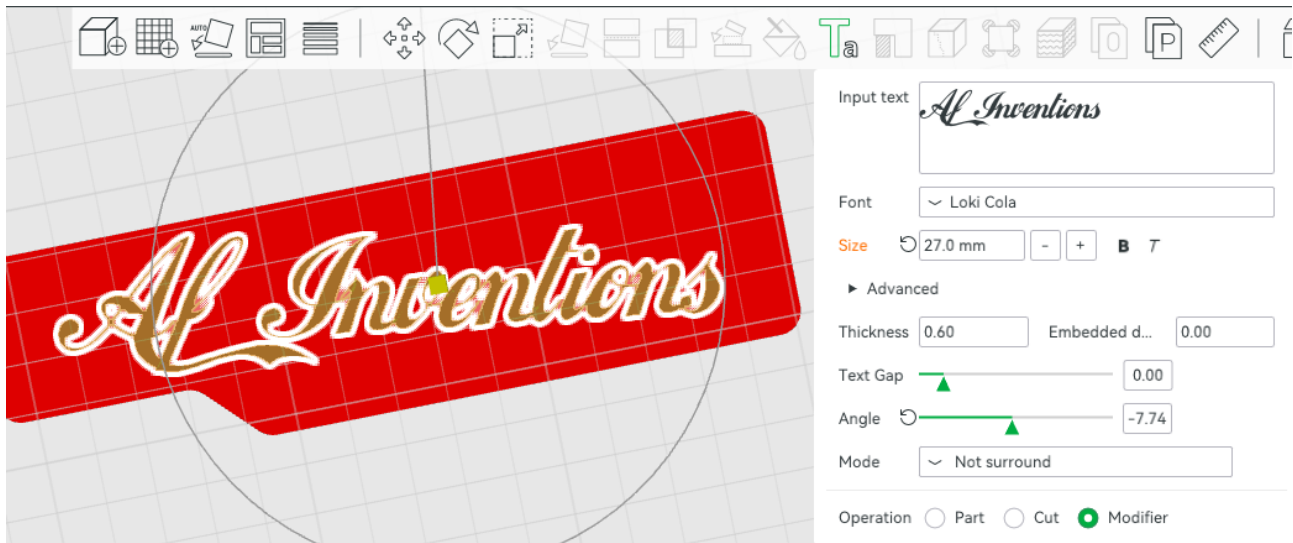
To avoid making mistakes, here is a foolproof trick I use: snap the required magnets onto the top of a finished, pre-printed frame. When it's time to insert them into the new part during the print pause, simply pull them off one by one and transfer them directly into the component's magnet pockets keeping that same alignment.

The Only Exception: The giant truck trailer is printed upside down. Because of this, its 6x2mm magnets must be inserted with the opposite orientation compared to all the other top components.

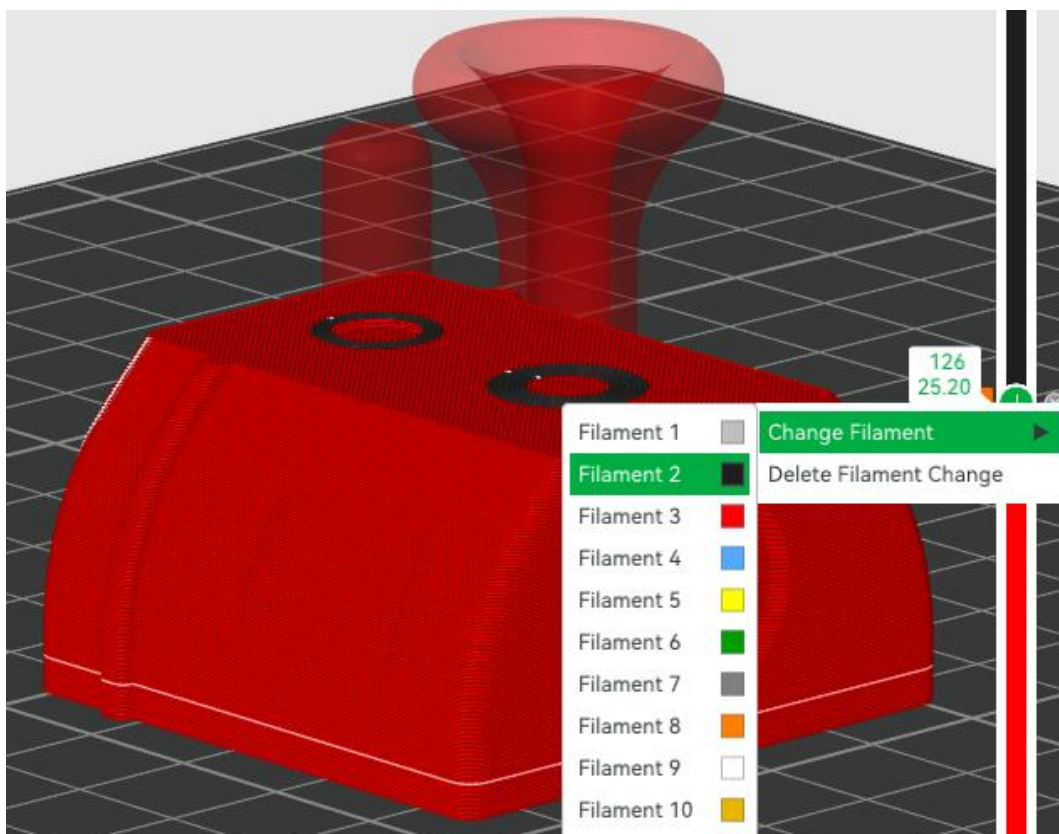




Speaking of the giant truck trailer, you can print the side panels and completely customize them with any text you like! Simply add a new text modifier or edit the existing one, and apply the following settings:



All detailed parts (such as headlights, windows, doors, etc.) are printed in single colors and glued together during assembly. At most, you will encounter a few parts that change color at a specific height layer, such as the front of the train.

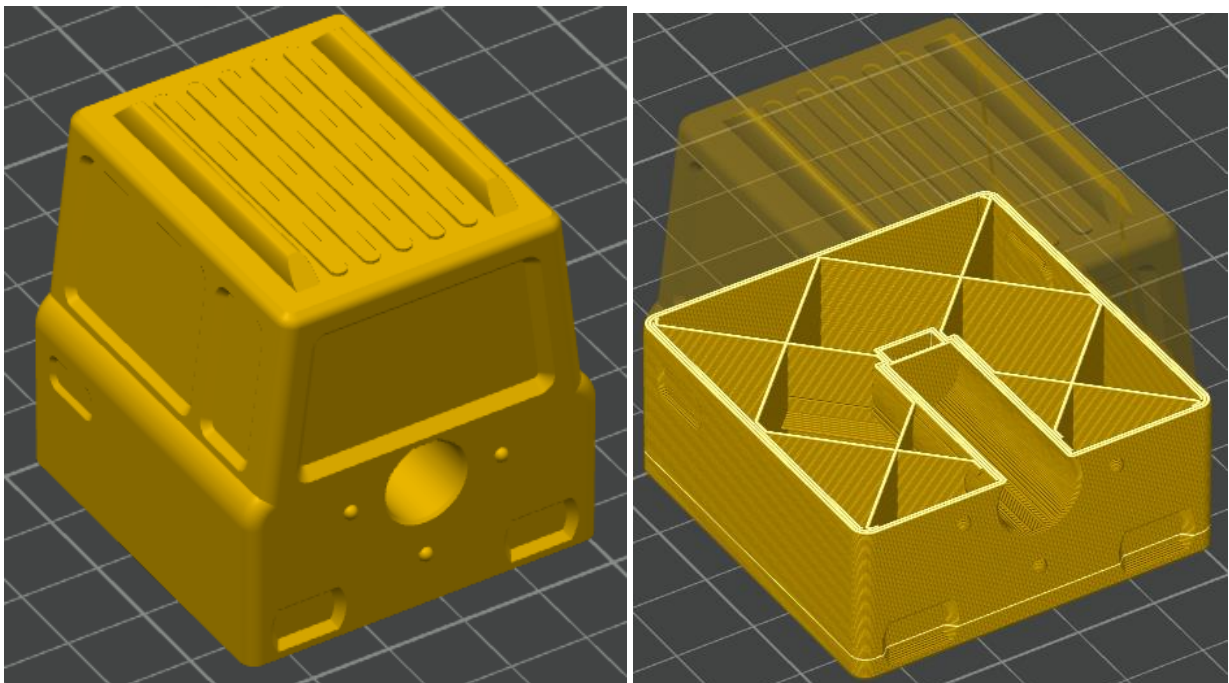




Even for these parts, a **multi-material system is not required!** You can easily perform a manual filament swap during the print. Of course, if you do own a multi-color printer, it's even easier—the machine will handle all the filament swaps automatically!

Unique Component Features

Some components include unique design features to make them look even better. For example, this specific part (the rear cabin of the Hummer) allows you to magnetically attach a spare wheel pin and wheel. Because of this, you will need to plan for an extra print pause to insert a vertically-oriented 6x2mm magnet!



Since every component is unique and may have its own specific requirements, I highly recommend using Bambu Studio to inspect each part before printing. This allows you to easily verify the orientation, print pauses, color changes, and other key settings!

GOLDEN RULE: Don't rush into printing random parts. Take your time, examine the details of every component, and you will get a perfect result with zero mistakes!

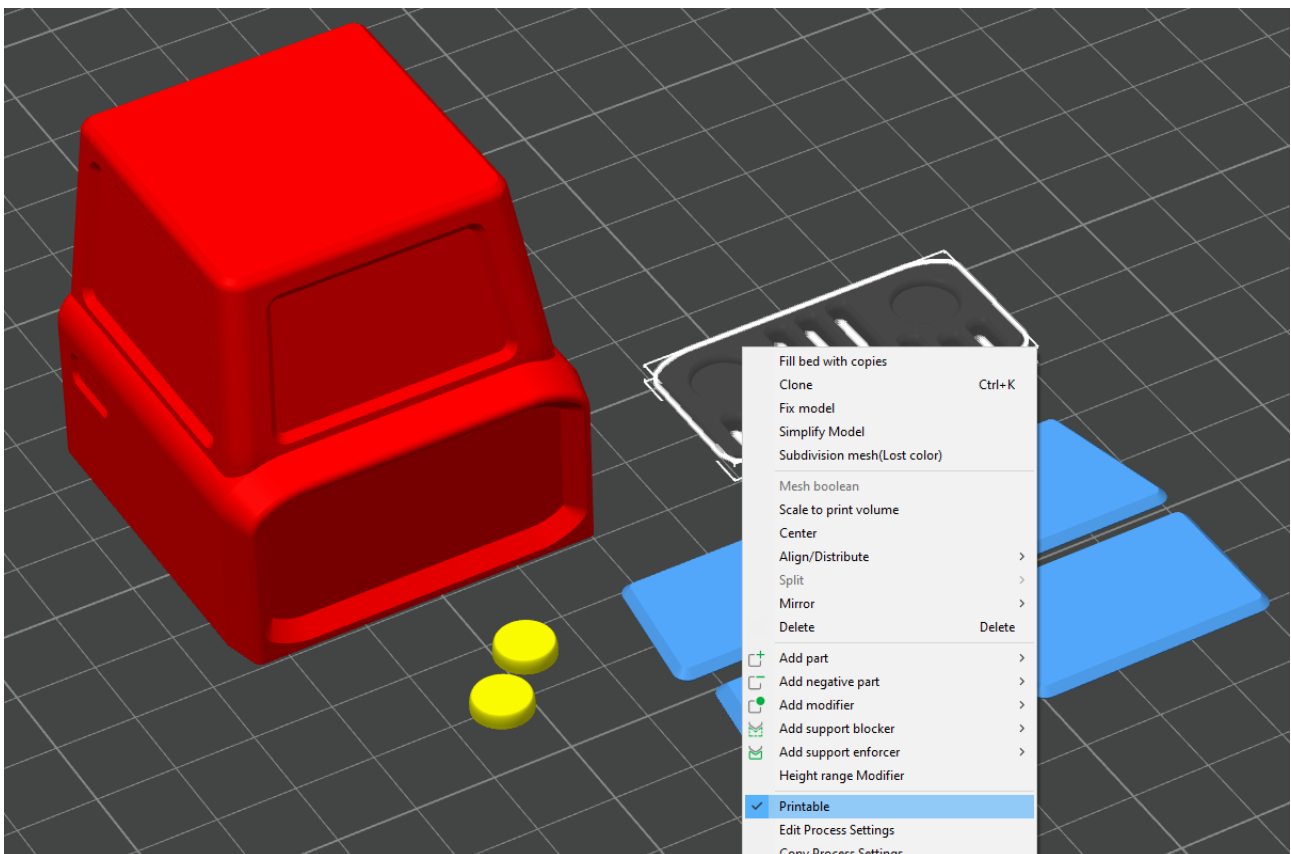


Locating the Detail Parts

All the small detail parts (such as windows, headlights, etc.) are positioned either right next to or directly following their corresponding main component on the build plates. To easily identify which main part they belong to, just check the filenames of the components!

Please note: Do not move or rearrange the objects on the build plates, as this will clear the pre-configured settings and essential print information.

To print models with multiple colored components, I recommend temporarily disabling the parts you do not wish to print directly from the plate (simply **right-click > uncheck "Printable"**).



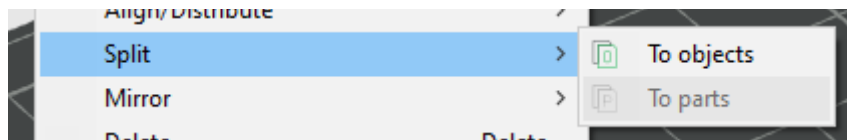
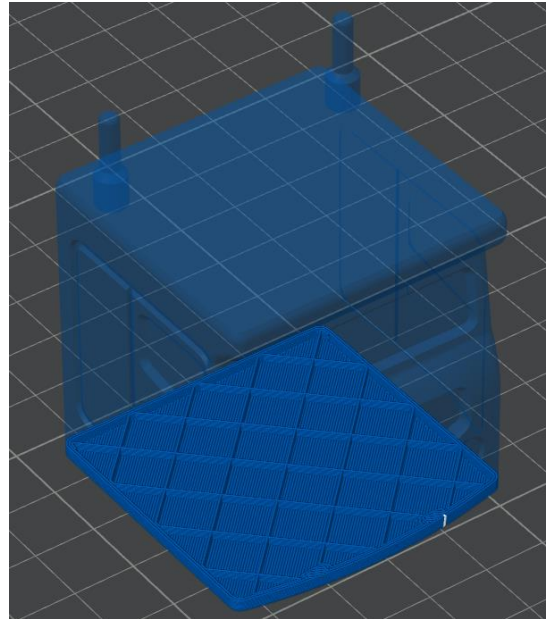
Lastly, please double-check that the manual pause command for inserting the magnets is still active in the sliced preview before starting the print.



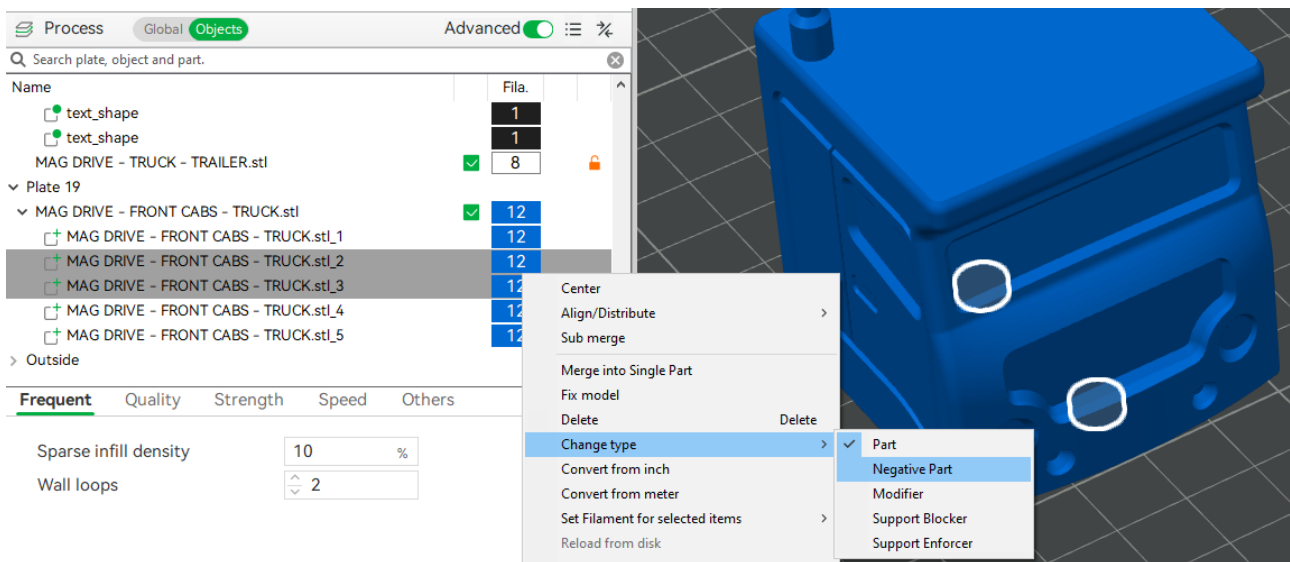
Are the holes for the magnets missing?

Sometimes, the holes designed for the magnets might disappear during the slicing process. Here is how to quickly fix this issue:

- 1) Split the object: Right-click the model and select **Split > To Parts** to separate the combined geometries.



- 2) Locate and select the holes: Go to the left sidebar (the Objects list), find the components representing the holes, and select them.
- 3) Change the object type: Right-click the selected holes, navigate to Change Type, and change them to Negative Part.



Once done, the holes will reappear in the sliced preview, perfectly clear and ready to house your magnets!



FINAL RESULT



Thank you!

ALFI

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