MACH 1 Gen.1 - Raspberry Pi 5 Enclosure

FAYRON

VIEW IN BROWSER

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Summary

The 1st Generation of the MACH 1 Enclosure, for Raspberry Pi 5. It's Focus? Might want to check the name again...

8.85 hrs	5 pcs	0.10 mm	0.40 mm	PET	58 g	Prusa MK4S

Hobby & Makers > Electronics

Tags: functional case led screws design enclosure air fan raspberry pi protection 5 raspberrypi heat access airflow insert ports acessible heatedinsert enlosure rpi5 rpi5case funcionality

The newly released Raspberry Pi 5 is a significant upgrade from its predecessors, offering enhanced performance and connectivity. To complement this advanced board, we've created a new 3D-printed case prioritizing both airflow and accessibility while maintaining a sleek, functional design called “**MACH 1**”.

MACH 1 is composed of two interlocking pieces, which fit together with precision, using a cleverly designed lip around the edges to snap securely in place without the need for additional hardware. However, for those seeking an even more robust setup, the case has been designed to accommodate M3x4mm heated inserts and M3x8mm screws. This guarantees added security, ensuring the Raspberry Pi 5 remains firmly in place, even in more demanding environments or projects.

The case’s airflow-focused design ensures that the Raspberry Pi 5 remains cool, even during intense processing tasks. We've placed squared holes on every side of the enclosure preventing overheating while maintaining a compact, sleek profile. Despite the focus on cooling, functionality hasn’t been sacrificed; the case allows full access to all of the Pi 5’s ports, including, **micro-HDMIs**, **USB-A**, **USB-C** and **ETHERNET**, making it easy to connect peripherals or accessories without obstruction.

One of the standout features of this case is the external access to the reset button, which is conveniently positioned for easy use without needing to open or dismantle the case. This feature is especially useful for users frequently rebooting or troubleshooting their Pi setup. Additionally, the case design includes a clear view of the Raspberry Pi 5's status LED, enabling easy monitoring of the device’s performance and simplifying troubleshooting by providing instant visual feedback.

In summary, the **MACH 1** case for the Raspberry Pi 5 offers a blend of performance and usability. Its airflow-centric design ensures optimal cooling, while the lip-lock mechanism and optional hardware inserts provide flexibility in assembly. With access to all ports, an externally accessible reset button, and visibility of status LEDs, it is ideal for both beginners and advanced users who require both form and function in their Raspberry Pi 5 projects.

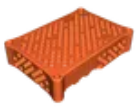
PRINTING RECOMMANDATIONS:

- Print with a nozzle **not bigger** than 0.4mm;
- Print with a layer height **not taller** than 0.2mm;
- We Recommend printing with **PLA, PETG**, **MATT** Filaments or **CARBON FILLED** Filaments for **best results**;
- In PrusaSlicer (and most other slicers) → Print Setting → Layers and perimeters → Avoid crossing perimeters: **ON (to reduce stringing);**
- In PrusaSlicer (and most other slicers) → Print Setting → Layers and perimeters → External perimeters first: **ON (For better surface finish and tolerance);**
- Print with **100% Infill;**
- Print with at least **3 Perimeters.**

HARDWARE: (not required)
Any **M3x4mm** Heated Inserts (Amazon IT; Example) https://www.amazon.it/ruthex DOfxvLg1lHY48A7-26837xuO4F2BBCbFc-K4z6ssS8Viz3etsBODEhB-ce79LOuOZXm p86yd2N8BJMRqSM3GgZ1ev3gr6lauSZnhRJtsxCoUO3OpJDGZdK7p7Wc_uOXoplW8 UY1o5RvrU&dib_tag=se&keywords=inserti%2Bfilettati%2Bm3x4&qid=17265894
Any **M3x8mm** Button/Socket head Screws

Model files

STLs 2 files



top_mach1_case.stl

bottom_mach1_case.stl

3MFs 5 files

mach1_case_mk4s.3mf

mach1_case_mk4.3mf

mach1_case_xl.3mf

mach1_case_miniis.3mf

mach1_case_mk3s.3mf

Print files

GCODEs 5 files

mach1_case_04n_01mm_petg_mk4s_8h51m.bgcode

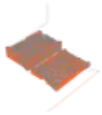
PET 0.40 mm 0.10 mm 8.85 hrs 58 g Prusa MK4S

mach1_case_04n_01mm_petg_mk4is_8h51m.bgcode

PET 0.40 mm 0.10 mm 8.85 hrs 58 g Prusa MK4

bottom_mach1_case_04n_01mm_petg_xlis_9h5m.bgcode

PET 0.40 mm 0.10 mm 9.09 hrs 58 g Prusa XL



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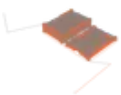
PET 0.40 mm 0.10 mm 10.47 hrs 58 g Prusa MINI / MINI+



mach1_case_01mm_petg_mk3s_16h20m.gcode

PET 0.40 mm 0.10 mm 16.33 hrs 58 g Prusa MK3/S/S+

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