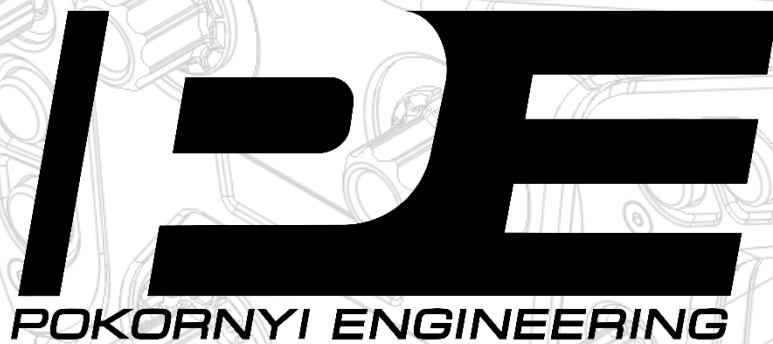




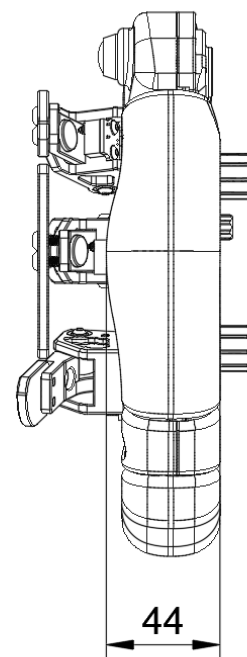
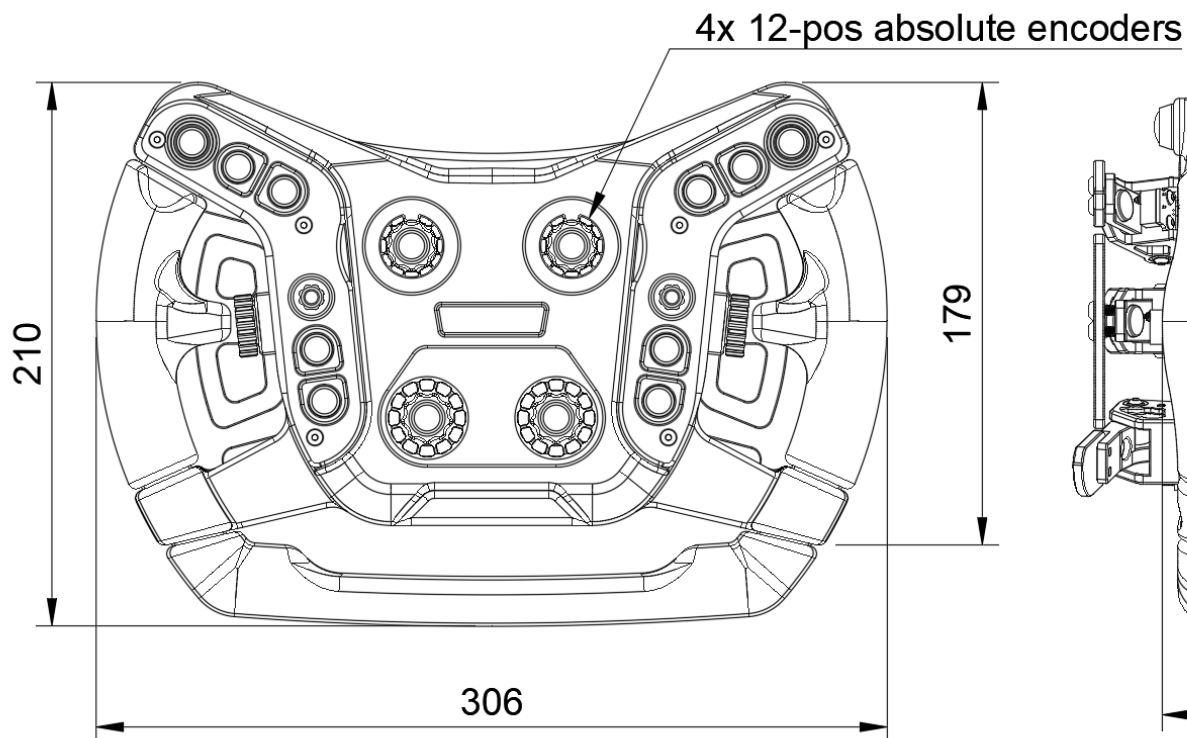
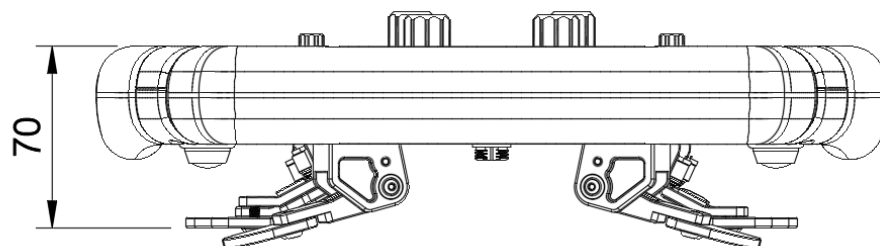
PGT

Assembly Guide

V1.0

Dimensions

All dimensions in mm.



Scope of this guide

The Assembly Guide provides step-by-step instructions for putting together all components of the device into a complete working unit. It covers the mechanical and electrical assembly process, including mounting, fastening, wiring, and connecting the pre-fabricated or pre-made parts listed in the BOM.

Tools required

- 1.5mm HEX Allen-key/screwdriver
- 2.0mm HEX Allen-key/screwdriver
- 2.5mm HEX Allen-key/screwdriver
- 3.0mm HEX Allen-key/screwdriver
- 7mm Wrench
- 8mm Wrench
- Flat-nose pliers
- 15mm Wrench (GX12 connector only)
- 18mm Wrench (Weipu connector only)
- *Soldering iron (for heat inserts, not required for carbon shell)*
- *File (for smoothing carbon fiber edges, if needed)*

Note – Carbon Fiber Parts

Real carbon fiber parts are hand-made and may have slight dimensional variations. While every part is quality-checked with multiple templates before shipping, minor edge filing may occasionally be required during final assembly to achieve the best fit. This is a normal part of working with real carbon fiber components.

Symbols

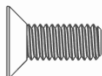
Icons and callouts used through this guide.

HARDWARE



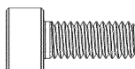
Heat insert

Pressed into printed parts with a soldering iron



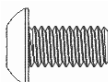
Countersunk screw

Flat head, sits flush with the surface



Socket head screw

Cylindrical head, hex drive



Button head screw

Low domed head, hex drive



Set screw

Headless grub screw, tightened into a knob or collar



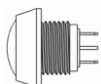
Standoff, male–female

Threaded stud one end, threaded hole the other



Standoff, female–female

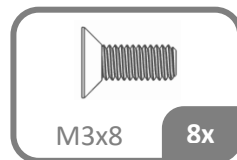
Threaded hole at both ends



Panel-mount button

Secured from behind with the supplied nut

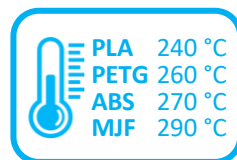
CALLOUT BOXES



Shows the fastener used in the step, and the **quantity** needed for that step only.



Using carbon fiber shell? Skip this step and continue from the step number shown.

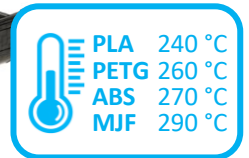
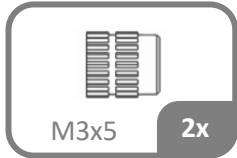


Soldering iron tip temperature for pressing heat inserts. Use the row that matches your shell material.

PLA	240 °C
PETG	260 °C
ABS	270 °C
MJF	290 °C

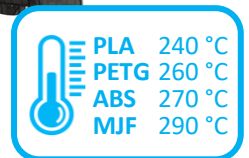
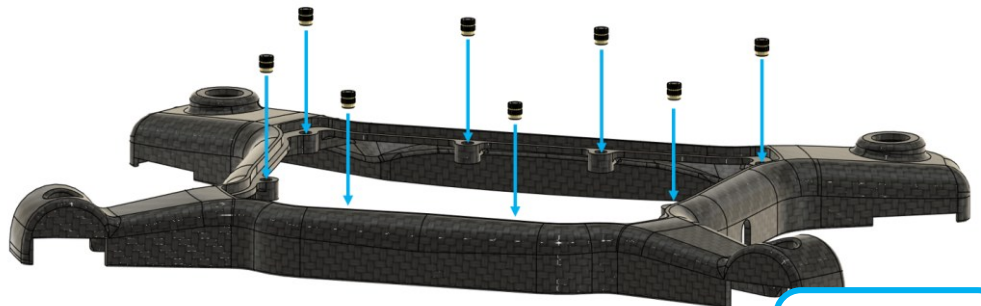
1

Press **M3x5mm heat inserts** into the inner side of the **rear shell** using a soldering iron. Ensure they sit flush with the surface.

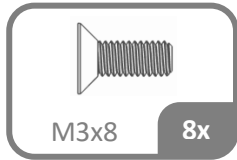


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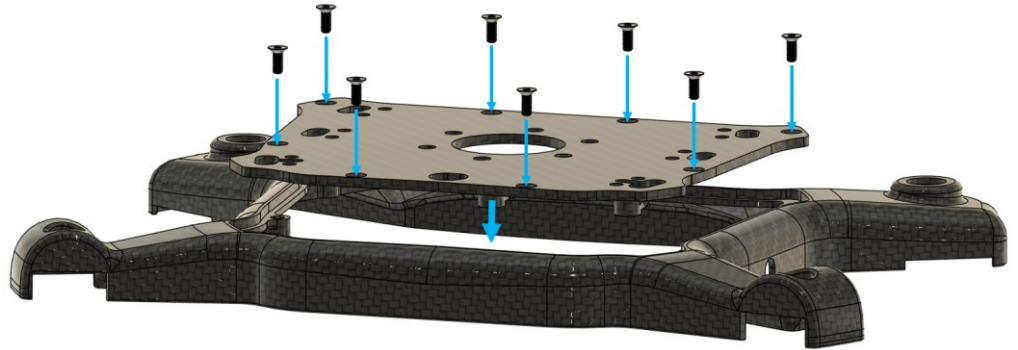
Press **M3x5mm heat inserts** into the outer side of the **rear shell** using a soldering iron. Ensure they sit flush with the surface.



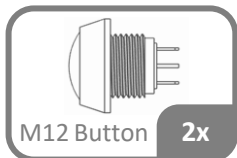
3



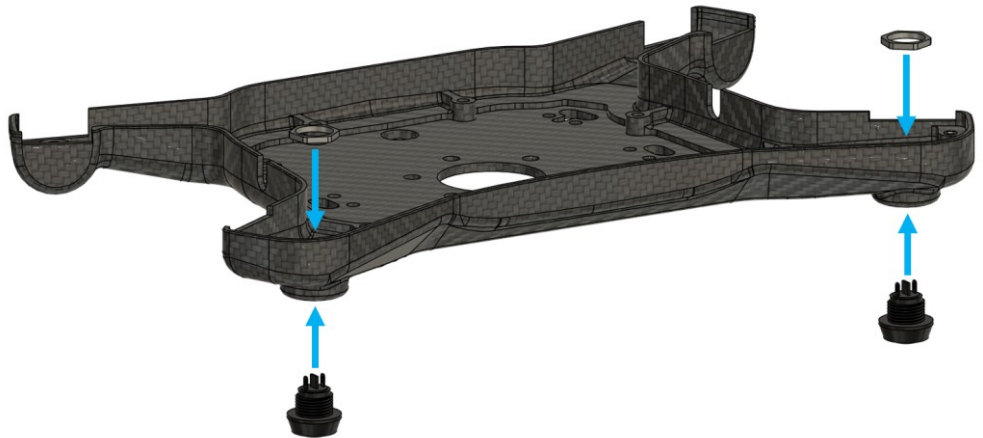
Secure the **backplate** to the **rear shell** using **M3x8mm countersunk screws**.



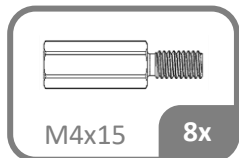
4



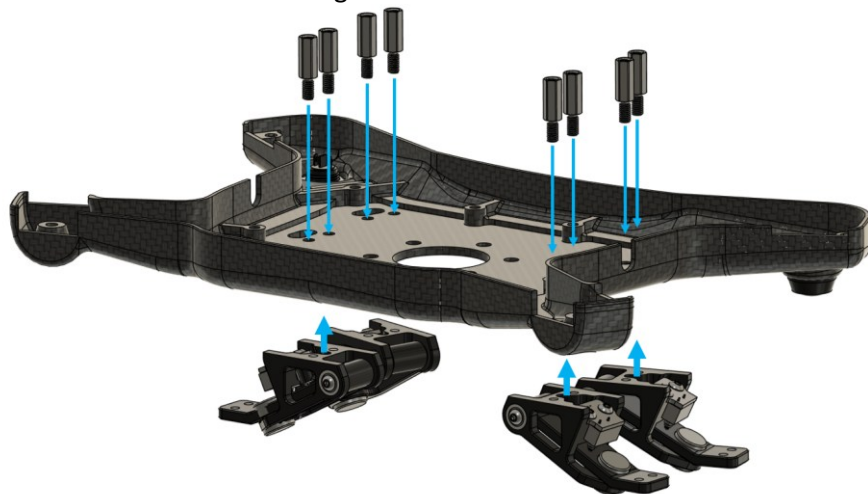
Mount the **M12 buttons** into the rear shell using the supplied nuts. Secure the nuts with flat-nose pliers.



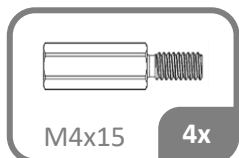
5



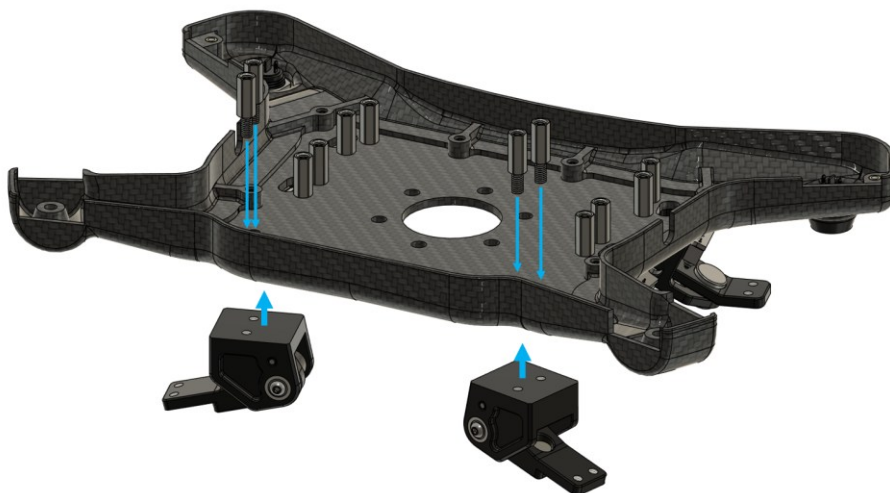
Mount the preassembled **shifters** to the rear shell using **M4x15mm standoffs**.
NOTE: If the extra shifters are not used, the 3D-printed paddle blank supports with M4 inserts must be installed instead.
NOTE: Recommended cable length is 60-80mm.



6

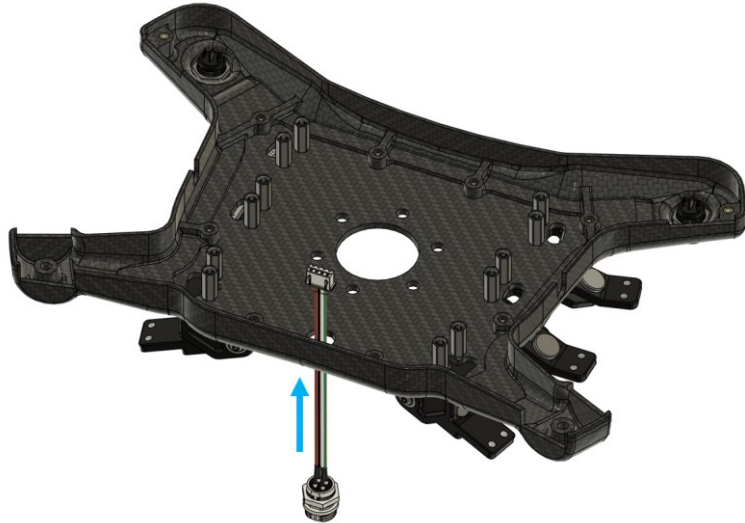


Mount the preassembled **clutches** to the rear shell using **M4x15mm standoffs**.
NOTE: If clutches are not used, the 3D-printed paddle blank supports with M4 inserts must be installed instead.
NOTE: Recommended cable length is 60-80mm.



7

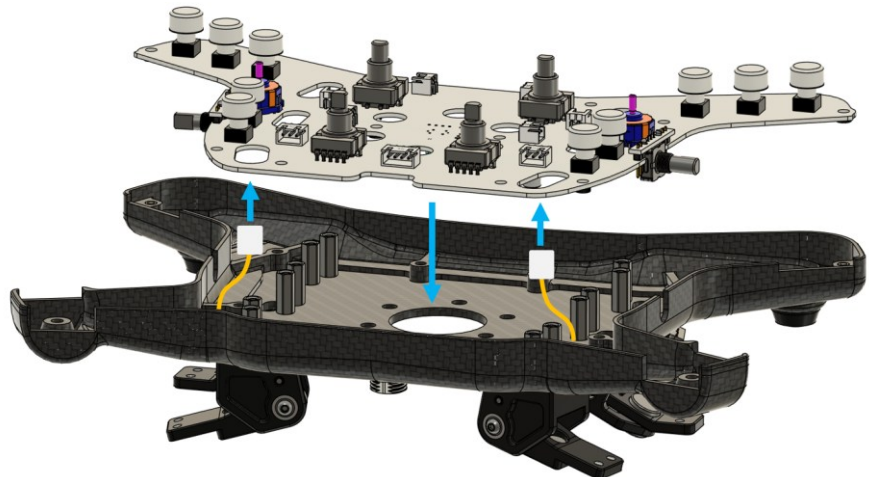
Mount the **SA12/GX12** connector to the rear shell. Insert the JST XH 4-pin connector sideways through the hole.



8

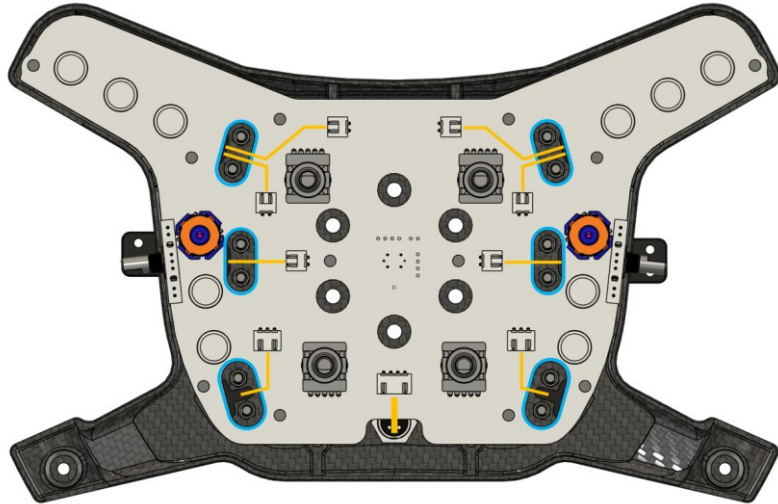
Place the **PCB** into the shell and feed the wires through the holes. Ensure no cables are pinched and that they can move freely through the holes.

TIP: If a solder joint covered with heat-shrink needs to be bent, warm it slightly first to avoid damaging or breaking the wires.



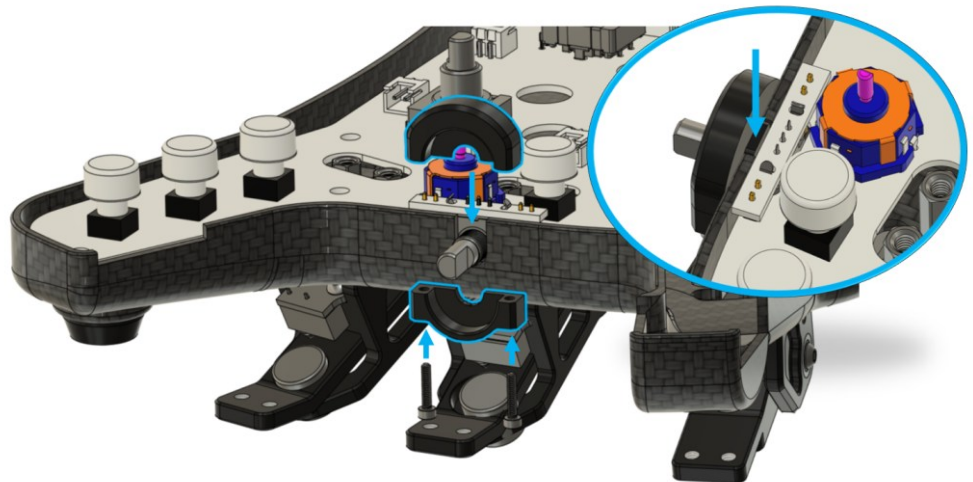
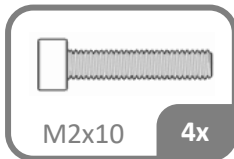
9

Connect the cables to the connectors marked below. Tuck the excess cable underneath the **PCB**.

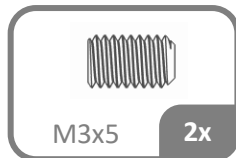


10

Secure the **encoder holders** as shown below using **M2x10mm button head screws**.
Make sure the key on the upper part fits into the slot in the shell.



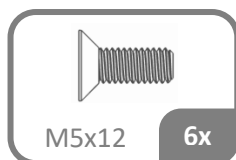
11



Mount the **side knobs** using **M3x5mm set screws** (1.5mm Allen-key).

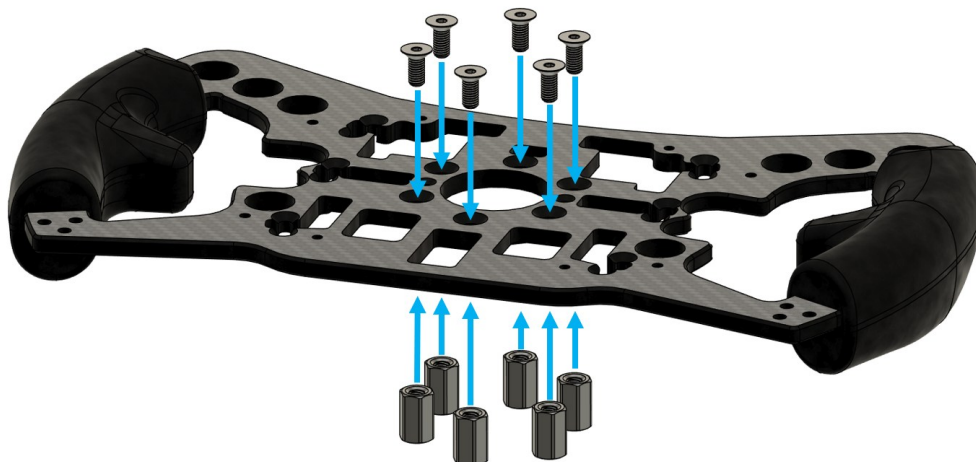


12

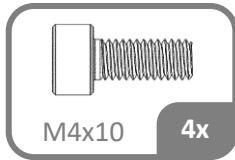


Secure **M5x15mm standoffs** to the main plate using **M5x12mm countersunk screws**. Make sure the screws are properly tightened.

TIP: To prevent the screws from loosening, apply thread locker.



13



Mount the **bottom grip** to the main plate using **M4x10mm hex socket screws**.
OPTIONAL: Mount the **grip end covers** instead of the bottom grip using one screw per side.



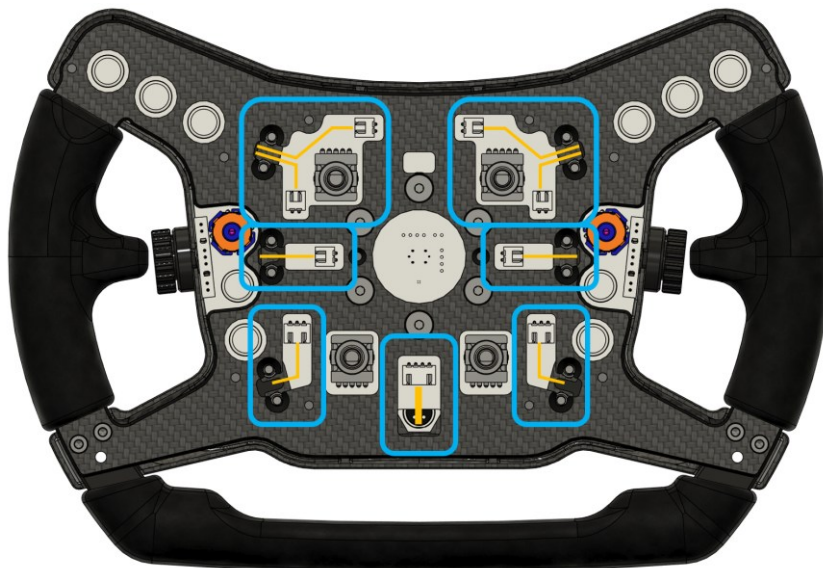
14

Place the **main plate** onto the rear shell as shown below.



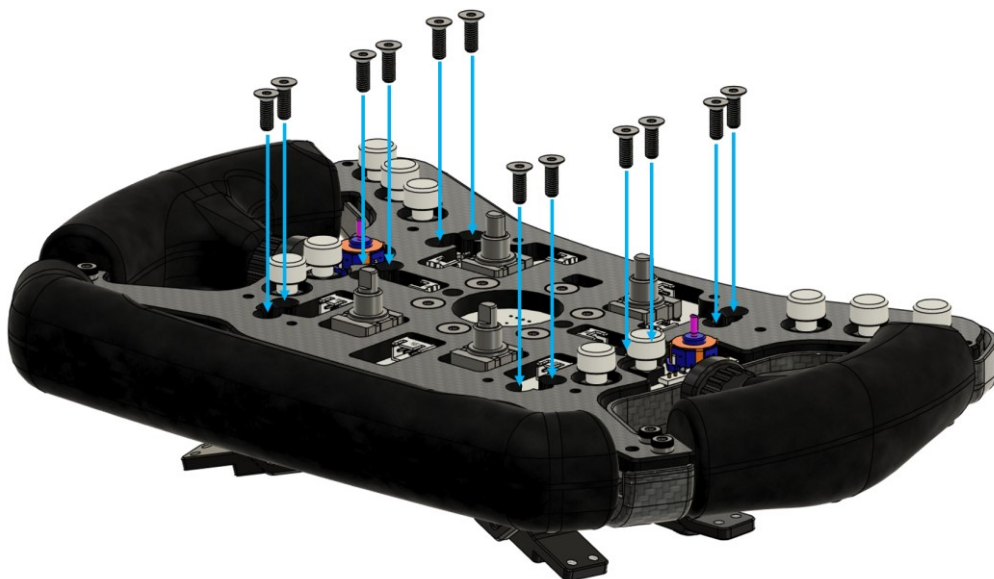
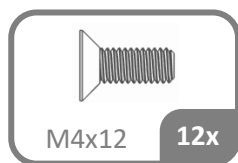
15

Make sure no wires are pinched between the **main plate** and the **PCB**.

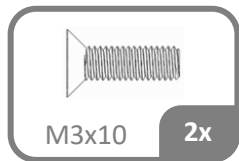


16

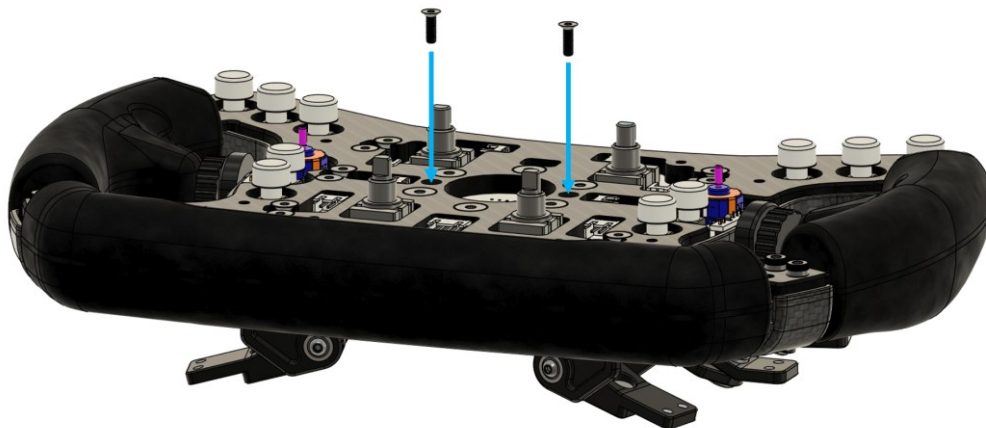
Secure the main plate using **M4x12mm countersunk screws**.



17

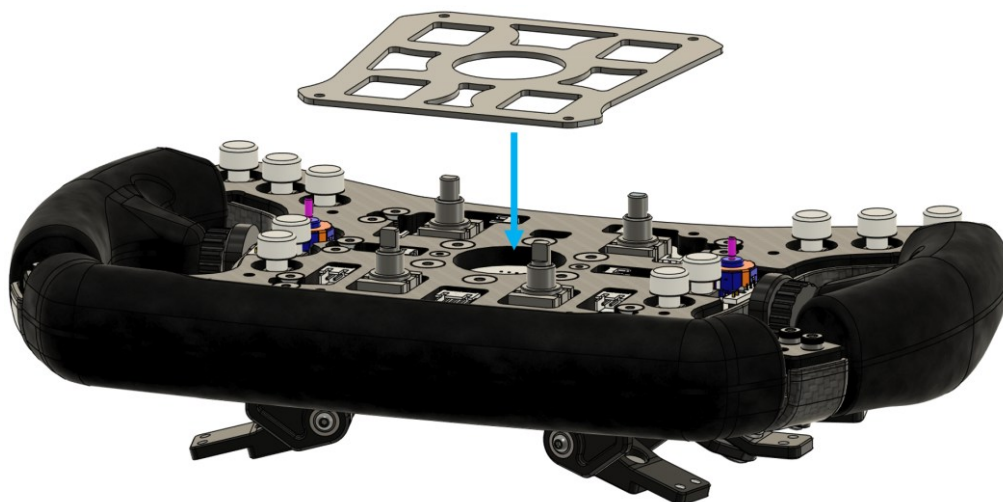


Secure the PCB to the main plate using **M3x10mm countersunk screws**.



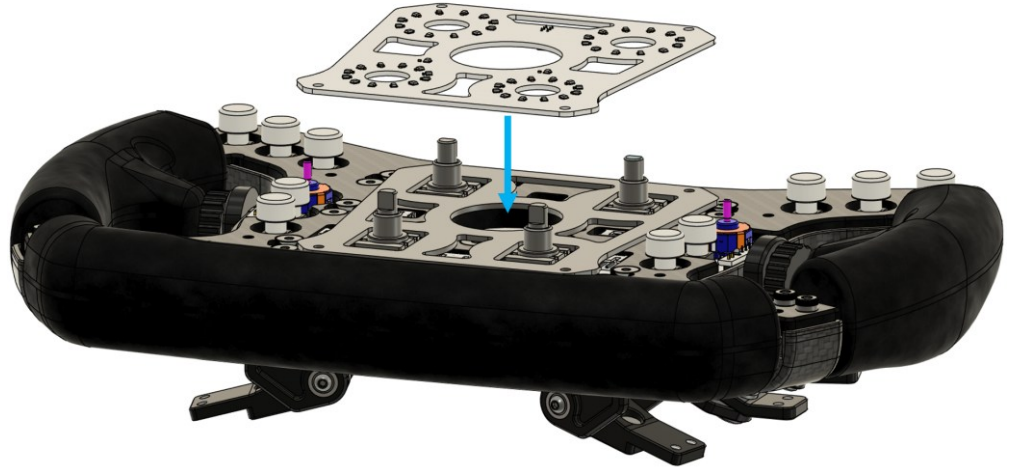
18

Place the **LED PCB spacer** on the main plate as shown below.



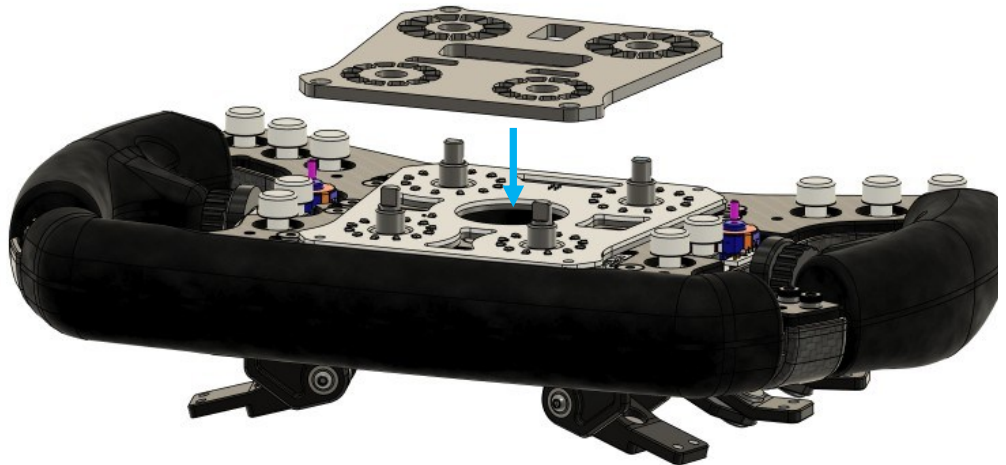
19

Mount the **LED PCB** and make sure the connector is properly plugged in.

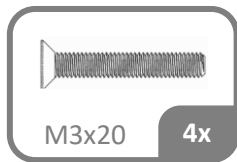


20

Place the **light guide** on the LED PCB as shown below.



21



Secure the light guide using **M3x20mm countersunk screws**.



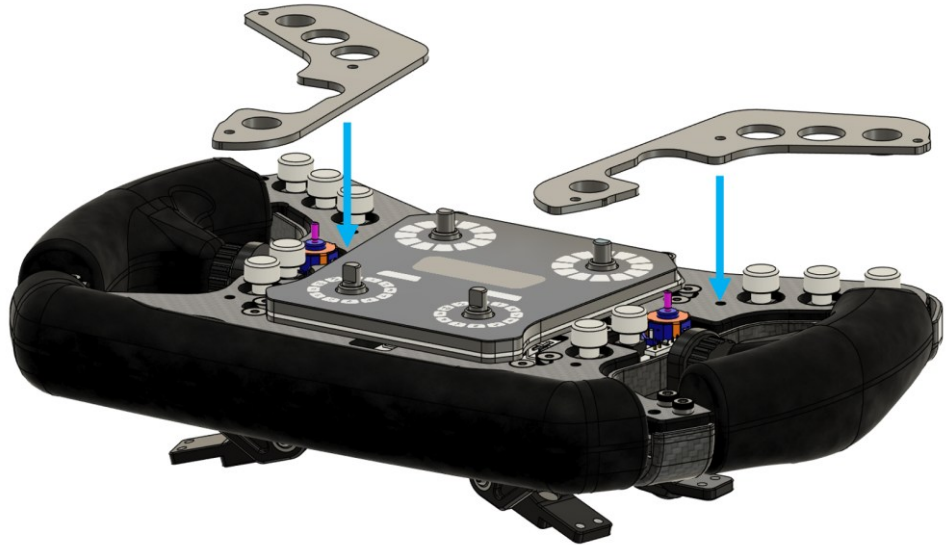
22

Apply the **rotary sticker** to the light guide.



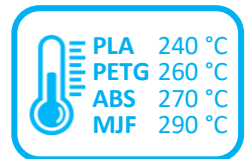
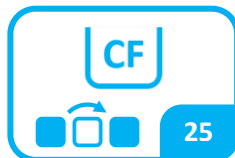
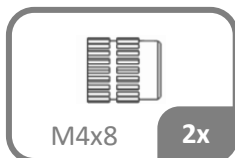
23

Place the **button plate spacers** on the main plate. Make sure the **guide rings face downwards**.



24

Press **M4x8mm heat inserts** into the inner side of the **front shell** using a soldering iron. Ensure they sit flush with the surface.



25

Place the **front shell** onto the wheel.



26

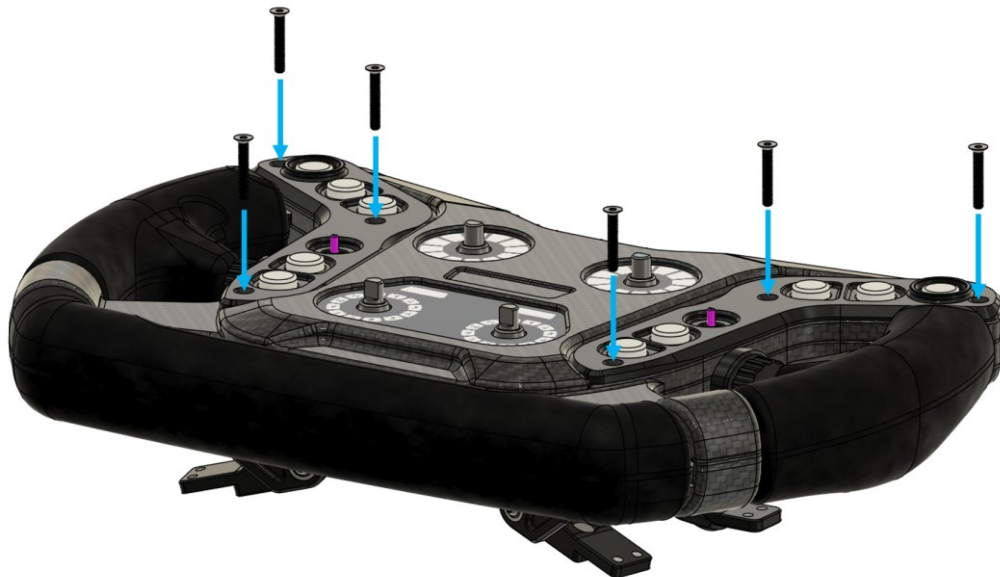
Mount the **button plates**.



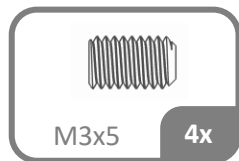
27



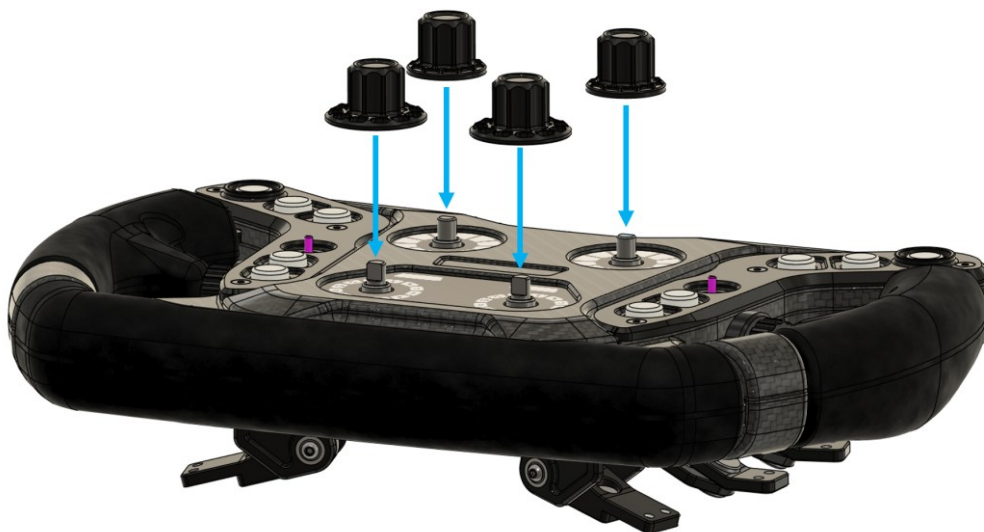
Secure the button plates using **M3x20mm countersunk screws**.



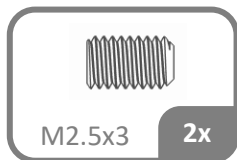
28



Mount the **chosen rotary knobs** using **M3x5mm set screws** (1.5mm Allen key).



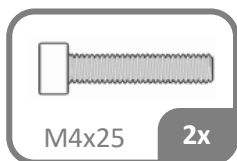
29



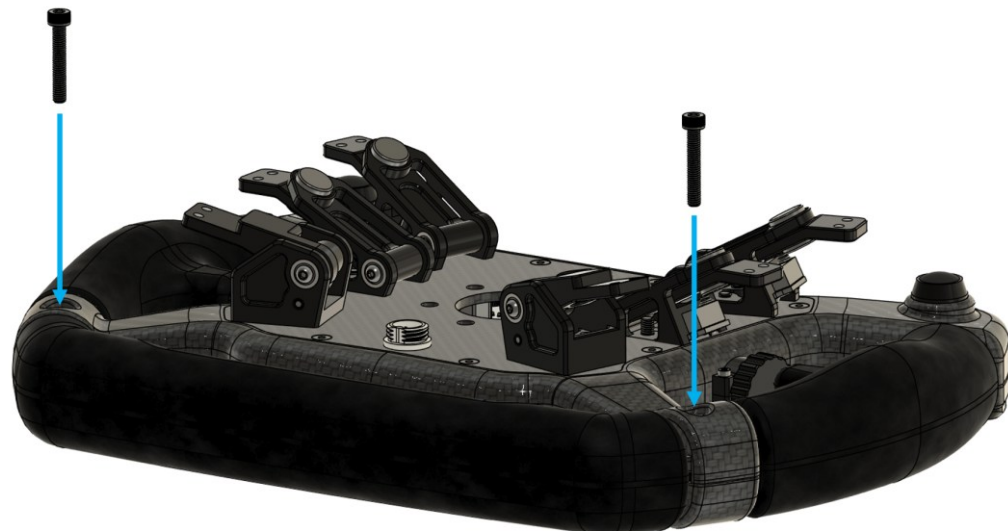
Mount the funky knobs using **M2.5x3mm set screws** (1.3mm Allen key).



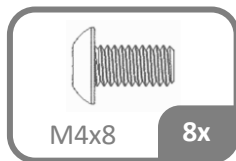
30



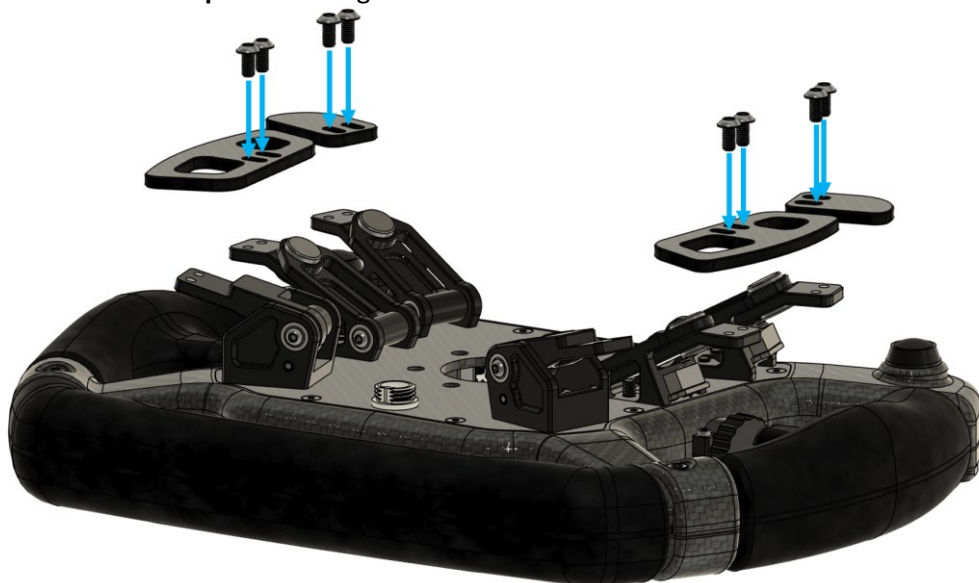
Flip the wheel over and secure the shell using **M4x25mm socket head screws**.



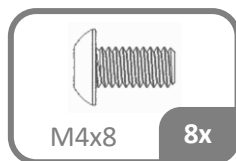
31



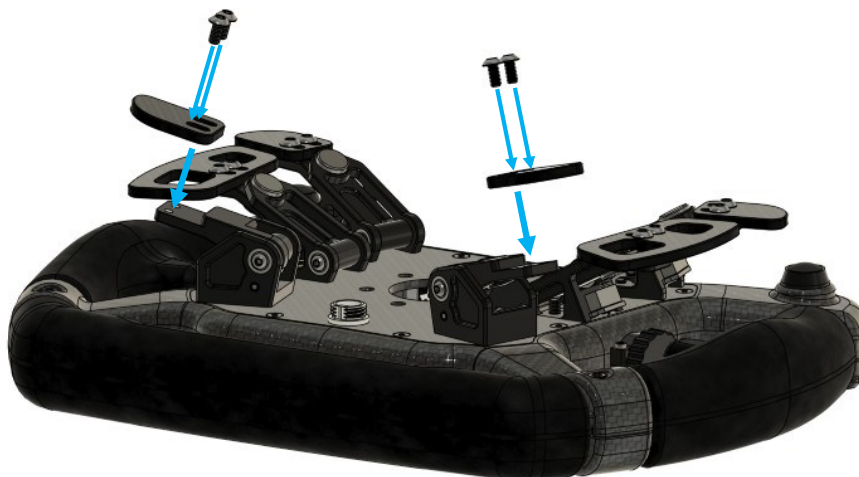
Mount the **shifter paddles** using **M4x8mm** button head screws.



32



Mount the **clutch paddles** using **M4x8mm** button head screws.



The race begins...



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