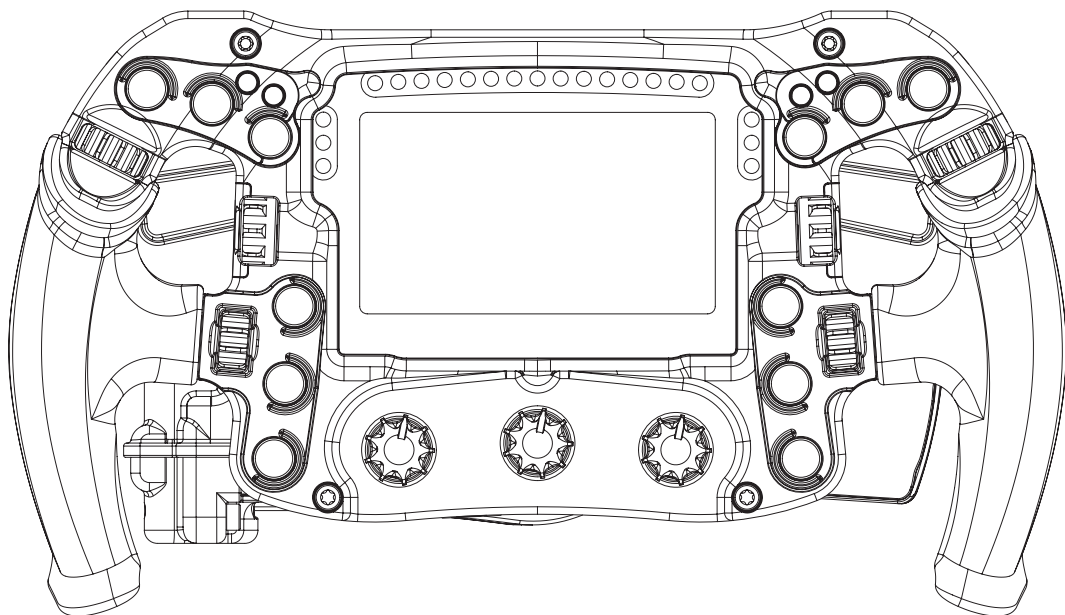


SIM LAB

INSTRUCTION MANUAL



Mercedes-AMG PETRONAS Formula One Team
Sim Racing Steering Wheel (2025)

VERSION 1.05

Last updated: 17-02-2026

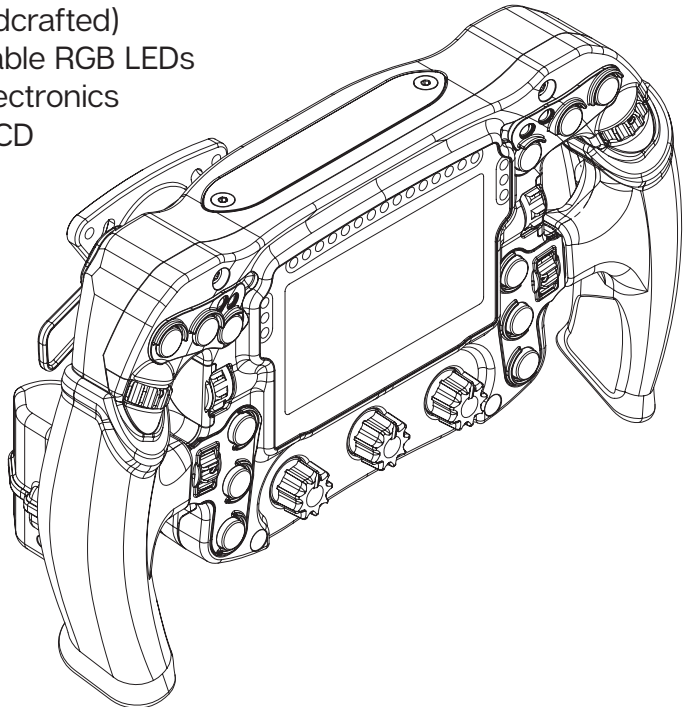
BEFORE YOU START:

Thank you for your purchase. In this manual we will provide you with the means to get started using your new steering wheel!

Mercedes-AMG PETRONAS Formula One Team Sim Racing Steering Wheel (2025)

Features:

- Full carbon shell (handcrafted)
- 25 telemetry controllable RGB LEDs
- Motorsports grade electronics
- High resolution 4.3" LCD
- 9 Rotary Switches
- 12+2 Buttons
- Mono-style shifter
- Adjustable clutch
- Lumberg to USB
- Fully licensed



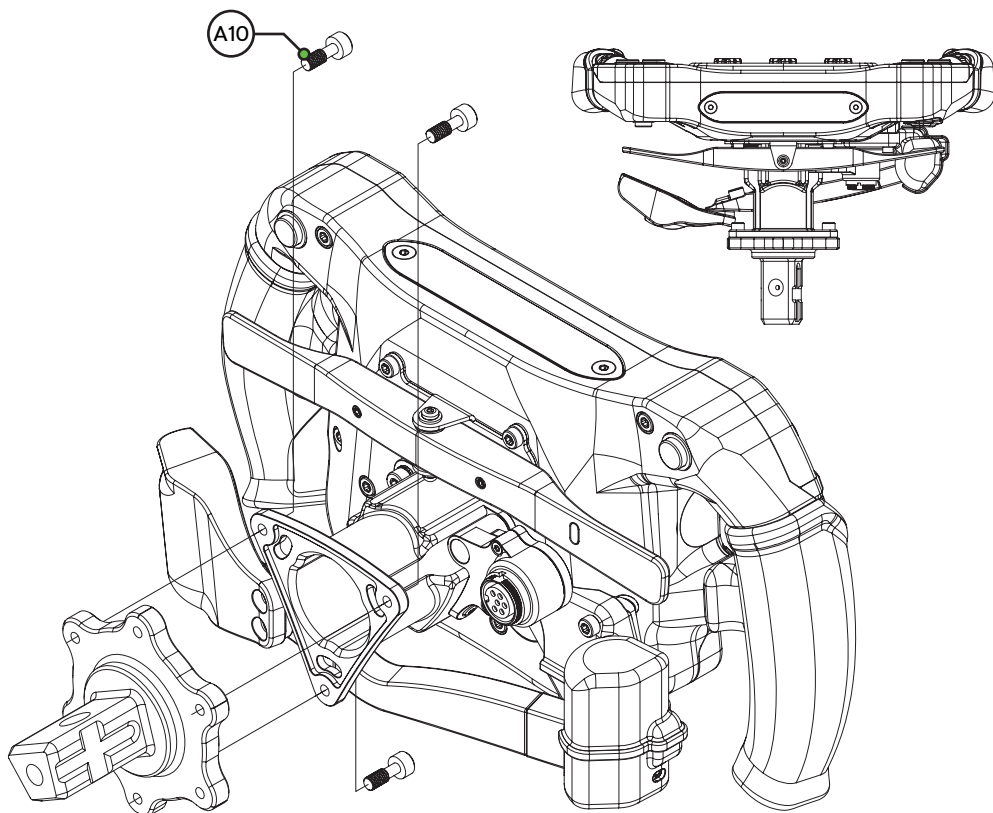
Preparing for use

Installing a hub/spigot

The hub features a 70mm PCD, with M5 threaded holes. The reason we went for the 70mm is that it is very universal, so you will have no trouble finding a suitable quick release solution.

In this example, we will be installing our Xero-Play spigot for our Xero-Play quick release system.

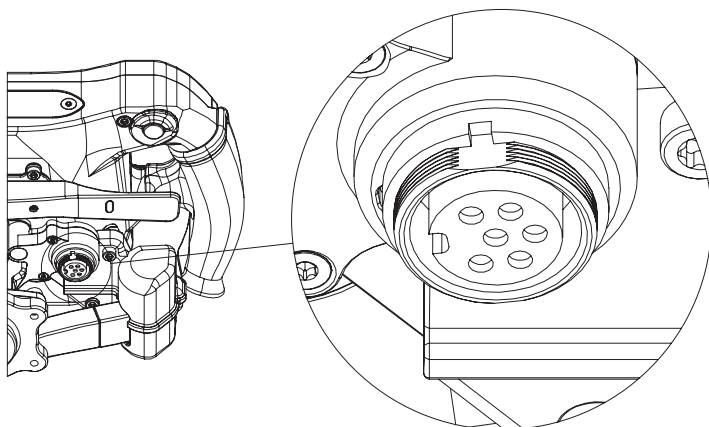
Since the Xero-Play spigots have threaded holes as well, use the captive bolts (A10) provided. Because of this, the bolts have to be fastened from the wheel side of the hub. Since space comes at a premium, we did include a 'stubby' allen key as part of the tool kit for this exact purpose.



In the case you are using your own hub without threaded holes, you can use normal bolts. These are also supplied (A11). Fasten them from the base side.

Connecting the Lumberg to USB cable

For this wheel we were able to provide a direct connection between the Lumberg connector and a USB port.



To connect the cable, simply align the notch on the cable with the receiving connector, and push it in. Thread on the nut for a very secure connection.

We recommend to connecting the USB side of the cable to the supplied USB extension cable, which can you fix/route to your cockpit as you please. The Lumberg to USB cable is coiled, to allow for expansion and contraction, but it is not meant to go directly to your PC, else the cable would simply get too long.

If you already have a (powered)-USB hub on your cockpit for other peripherals, you of course are free to use that.

In case you have existing GRID Products with a power injector box, you can use that setup. Simply take the lumberg to lumberg cable and connect wheel.

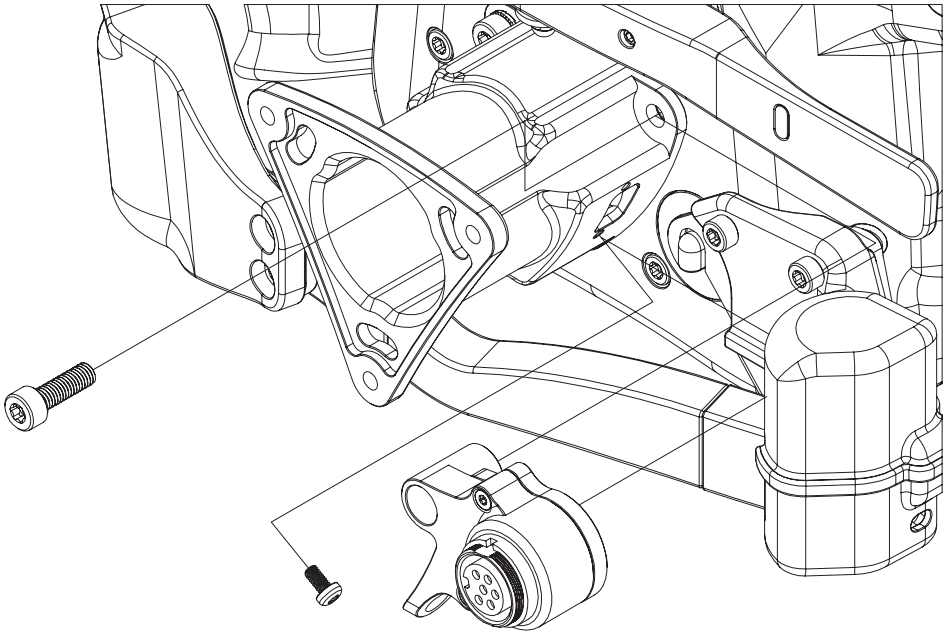
Preparing to install the passthrough cable

For people who really want to go all the way and clean up the rear of the wheel, we thought of you. Although going with a passthrough cable as a whole is more of an advanced user thing, this part is a more simple task. It will only require some more specific tools, such as an angled Torx allen key and a long shaft Torx driver.

Step 1:

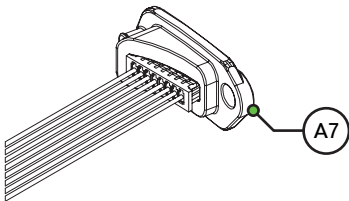
Remove the bolts holding the Lumberg Wing in place and carefully disconnect the connector, leaving the cable hanging down the side of the hub.

The bolts can be a bit difficult to reach.

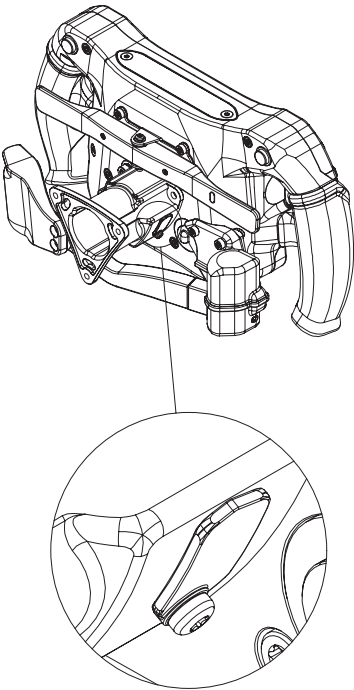
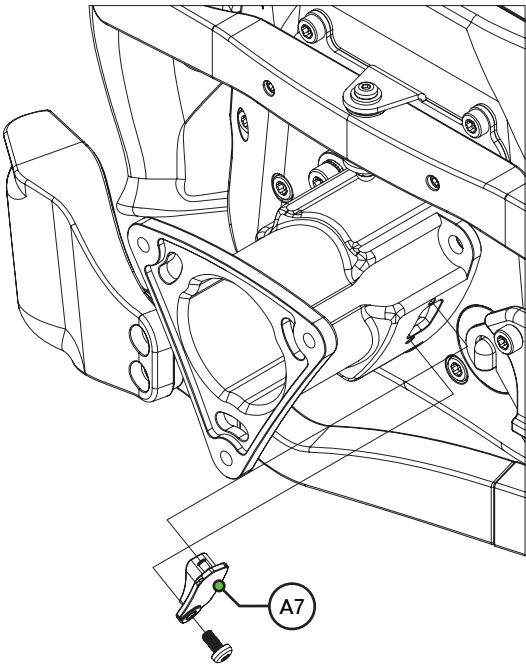


Step 2:

Firmly plug the now unused connector into the port plug (A7), be careful not to tug on the cable.

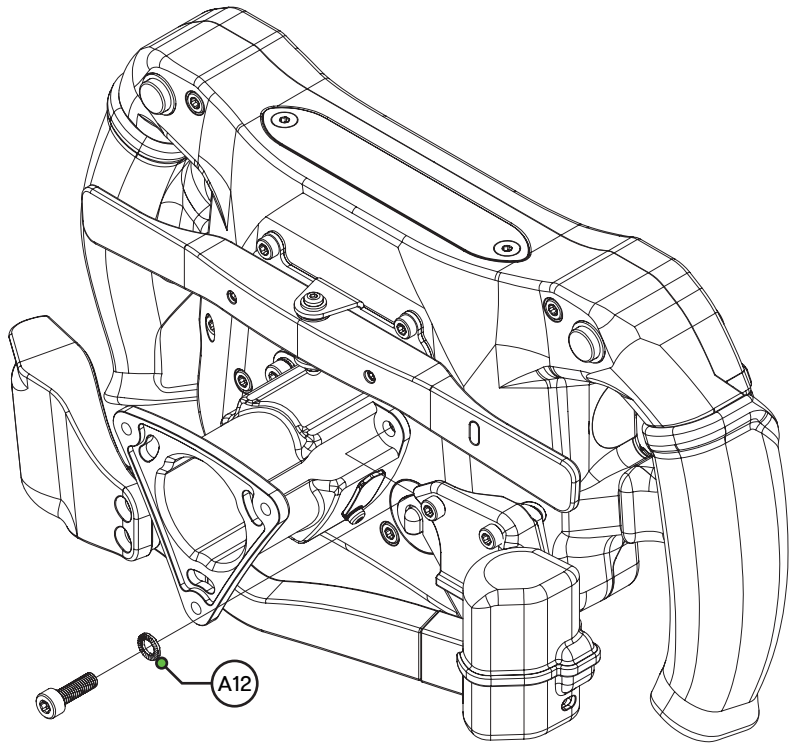


Step 3:
Carefully feed the cable back into the hub and plug the port cover into the port hole.
The stub side of the port cover interfaces with the top hole, use the previously removed bolt to fix the port cover in place.

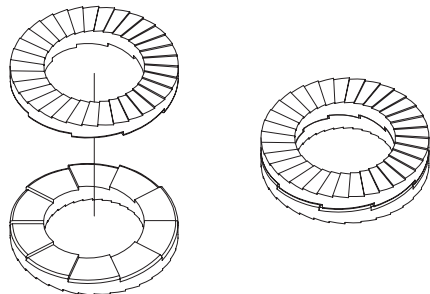


Step 4:

All left to do on the wheel side, is to make sure we have three bolts fixing the hub in place. The hub bolts in place are paired with locking washers. The bolt we removed earlier, a locking washer pair (A12) has been provided for.



For the washers to work as intended, please align the sides with the coarser teeth to each other like below.

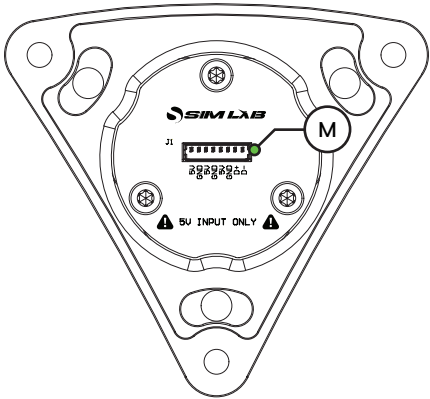


Now you are all set to connect your own passthrough cable/electronic quick release!

A word on the passthrough cable

Some quick releases offer passthrough functionality, negating the need for a coily cable going from your wheel to the power injection box. After the preparations on the previous pages, you can connect the passthrough cable to the rear of the wheel.

Using the passthrough cable (A4), USB-A to molex (M) (see connector below), you can connect straight to your quickrelease (given it has a USB-A passthrough connection).



The wheel itself is designed to use 12V of power, the passthrough solution is only able to use 5V of power as per USB connection standard.

When experiencing intermittent power or signal loss on the steering wheel, we recommend to reduce brightness of LEDs and the LCD, to reduce power consumption.

Note: please do **not** connect the wheel through both the power injection box and the passthrough cable at the same time.

Installing drivers

Display drivers

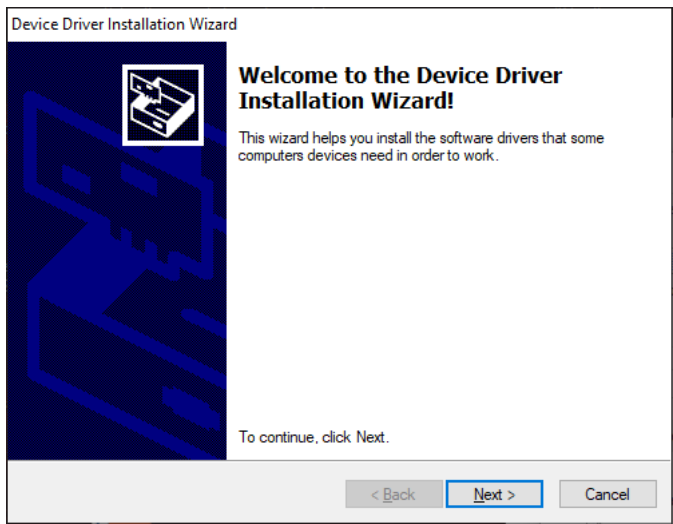
To enable the display part of the steering wheel, a specific driver is needed. This can be downloaded through the URL and/or QR code. When updating to the latest RaceDirector (see page 17), the LCD driver is part of the installation process.

[Sim-Lab LCD driver download:](#)



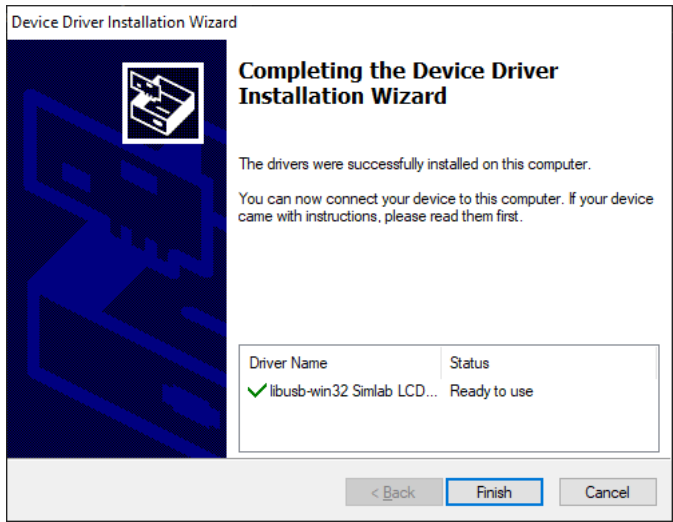
Installation

To install the display driver, unzip the downloaded folder and run 'SimLab_LCD_driver_installer':



Press 'Next >'.

The drivers will install now.



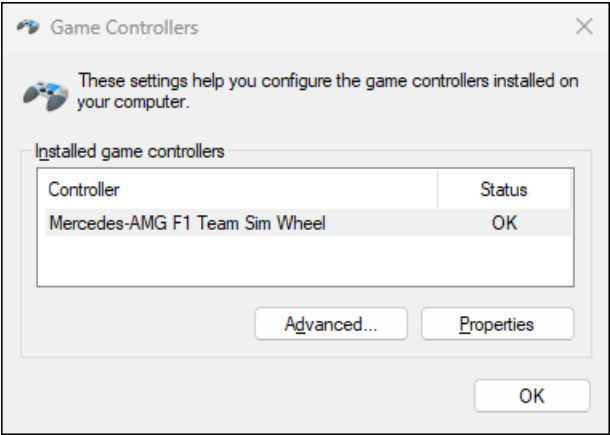
Press 'Finish'.

Initial calibration

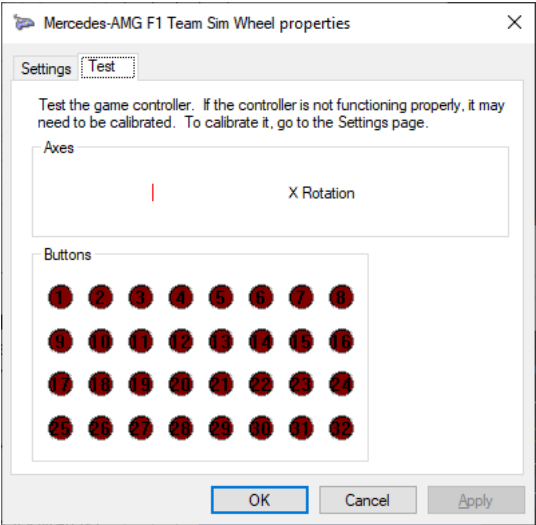
Before using the wheel, we recommend to check all inputs and calibrate the clutch.

To make this an easier and more visual experience, let's open the Windows Game Controller program.

The quickest way to do this is to press the windows-key, type 'Game Controller' and hit 'enter' on your keyboard. This will open the Windows Game Controller program.

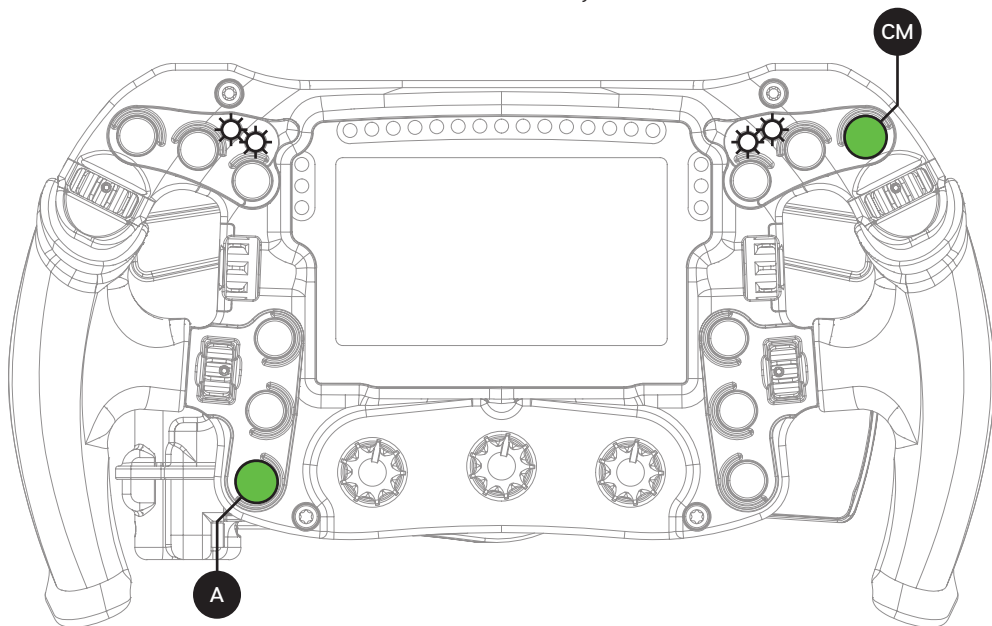


Select 'Mercedes-AMG F1 Team Sim Wheel' from the list and press 'Properties' to access the properties window.



Calibration Mode

The calibration is a very straightforward process, but first we need to enter the Calibration Mode on the wheel itself. It also is recommended to set the middle function encoder to the '1 - DEF' position. To activate the wheels' calibration mode, **Press and Hold** the ADJUST (A) button and CALIBRATION MODE (CM) button at the same time. Keep doing so for at least **5 seconds**, until you see button 1 flashing in the calibration program. On the wheel itself, the warning LEDs will start flashing (red). Release both buttons when the wheel successfully entered Calibration Mode.



Calibration

Calibration is easy to do. Simply fully depress and hold the clutch for about a second, release, and you're done. After this has been done, the wheels' firmware has registered the minimum and maximum values for travel. Press the Adjust (A) button a single time to exit the Calibration Mode. The mono shifter is calibrated automatically and does not require manual calibration.

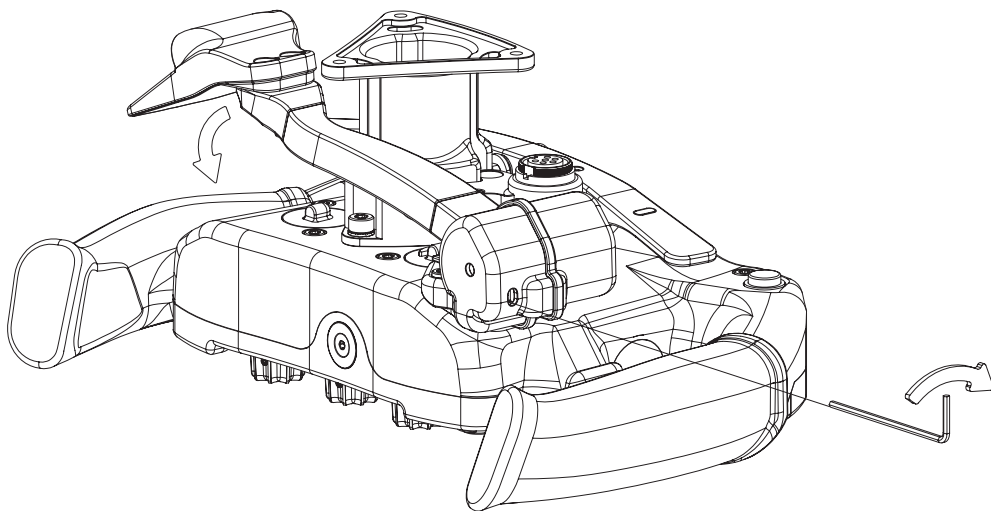
While the Windows Game Controller program is still running, it is worthwhile to check all buttons and encoders are working.

All buttons have one input, the encoders have two (clockwise and anti-clockwise) in simple mode (default). As for now this windows program only shows you 32 button inputs on screen, don't worry, the wheel works fine. After installing RaceDirector, you can always check all inputs are working there..

Clutch

The clutch paddle can be adjusted so it has the throw you are comfortable with.

To adjust the travel of the clutch, simply turn the setscrew. The clutch will move closer to the wheel, effectively reducing the available travel it has.



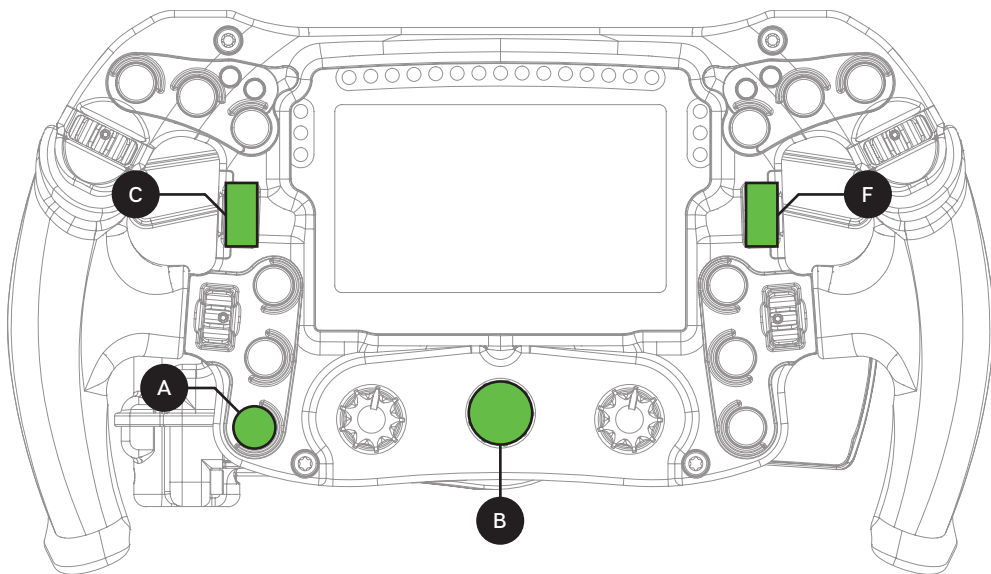
When adjusting the setscrew, slightly pull in the clutch paddle when adjusting to release tension on it. This makes it a bit easier to adjust and reduces wear on parts. After adjustments, be sure to recalibrate the clutch paddle, this is mandatory to reset the minimum and maximum values. Please refer back to the previous page for information on calibration.

Bite point adjustment

Bite point adjustment is available with the steering wheel set to 'expert mode' and only while in the **BITE mode** or **position 2 on the function encoder (B)**. It is important that the clutch paddle has been calibrated before adjusting its behavior. Please see page 12 before following the steps on this page, if you have not calibrated your clutch paddle already.

To adjust the bite point, **Press and Hold** the **ADJUST (A)** button. Next, start by dialing in the bite point roughly by using the **Coarse (C)** adjustment knob, tweak using the **Fine (F)** adjustment knob.

The **Coarse (C)** adjustment adjusts in increments of 10%, where the knob numbers show the value. For example, position 7 = 70%, while **Fine (F)** does the same in single digits. For example: left knob position is 7, right knob position is 5, equals 75%.



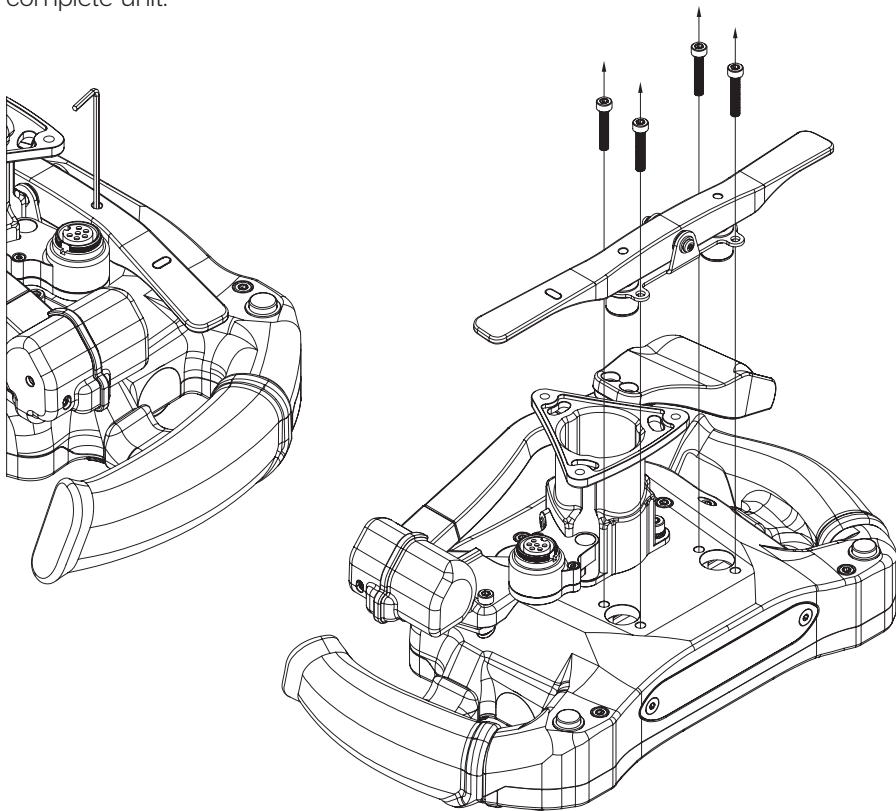
After you finished setting bite point, you can back out of this mode by simply releasing the **ADJUST (A)** button.

Shifter

There is some adjustability built into the shifter, to be able to adjust the shifting force to your preference. This is a fairly easy process, which require simple tools.

Please disconnect the wheel from your PC before working on it.

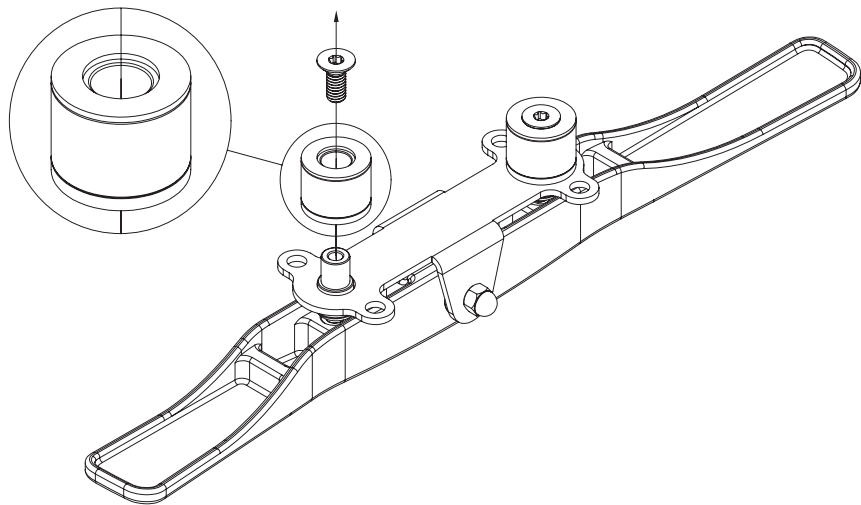
First, loosen the two setscrews in the shifter arm evenly, until the shifter arm has some play in it. Then, loosen all 4 bolts to remove the shifter assembly as one complete unit.



The magnets have two different rubber pads on opposite sides. The thin pad touching the bracket will result in more force. Swapping the magnet around allowing the thick pad to touch the bracket (as installed from the factory), will result in less force needed to complete a shift.

Additionally, supplied are smaller magnets following the same configuration. This allows for less shift force overall if that is what you prefer.

To change the magnet orientation or magnet entirely, simply loosen these two bolts and remove the magnet. Either choose the different magnet, or turn the current one around.



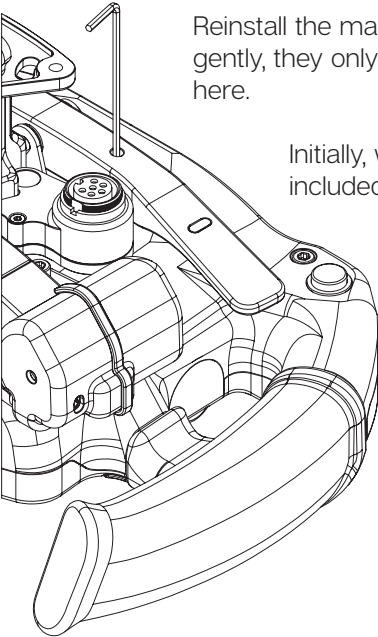
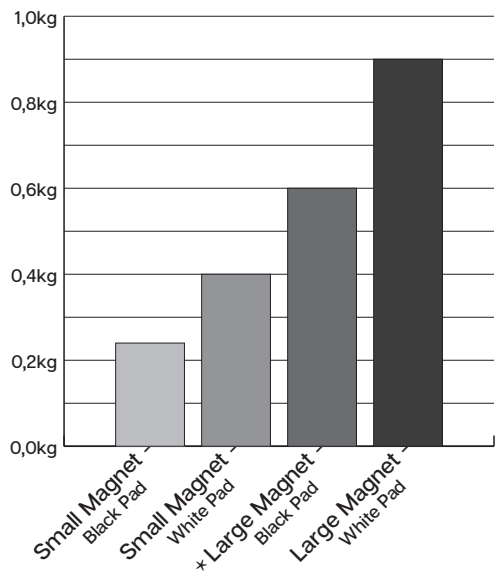
As mentioned, each magnet has two sides with different pads. This means you can choose 4 different strengths of pull force in total. The pads are color coded, WHITE means more force, BLACK means less.



Reinstall the magnets (make sure the same pad orientation for both) and thread in the bolt. Just thread these in gently, they only hold on the plungers, no clamping force is required here.

Initially, we had you loosen two setscrews. This step was included to make space for the various pad thicknesses. After installing the magnet and/or magnet orientation of your choice, we need to setup the shifter arm correctly.

To help you choose how each combination measures up to the default*, here is a small graph showing pull force in kilograms.



Reinstall the magnet and thread in the bolt. Just thread these in gently, they only hold on the plungers, no clamping force is required here.

Initially, we had you loosen two setscrews. This step was included to make space for the various pad thicknesses. After installing the magnet and/or magnet orientation of your choice, we need to setup the shifter paddle correctly.

Simply tighten each of the two setscrews in very small increments to dial the play out of the shifter arm, making sure the shifter arm is level when you are done.

Take your time, it is easy to do, especially when looking top down on the wheel. It just requires some patience and you'll be back racing in no time.

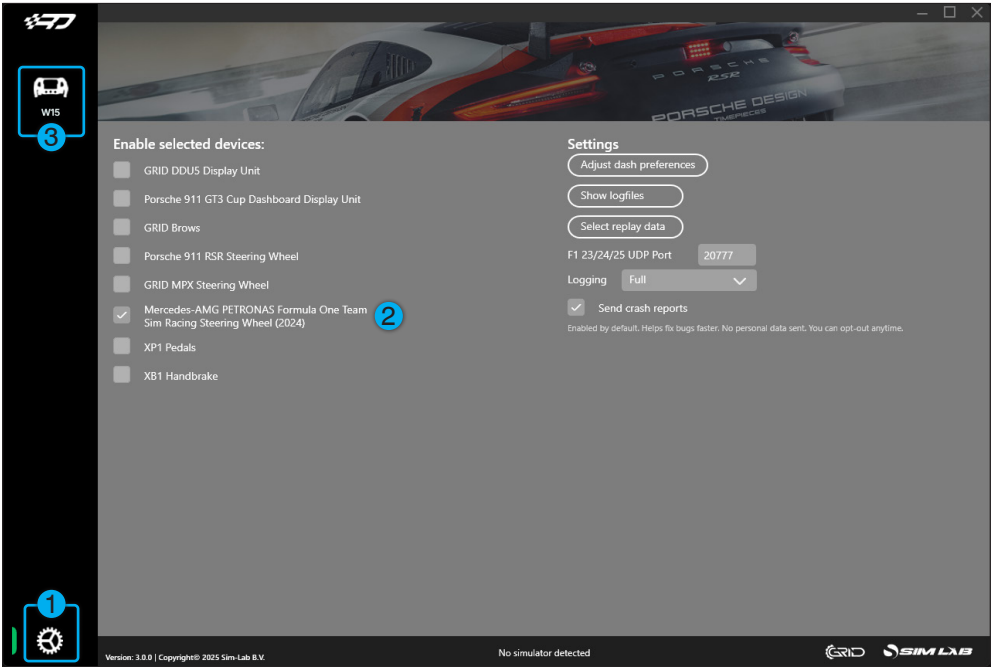
RaceDirector

Download and install the latest version of RaceDirector from www.sim-lab.eu/srd-setup

For explanation on how to install and use RaceDirector, please read the manual. This can be found here: www.sim-lab.eu/srd-manual

We will now go over the very basics to get going using RaceDirector to get you on track asap. We really urge you to go through the manual for a more in depth explanation of the possibilities RaceDirector has to offer.

First we need to activate the product, this is done on the 'Settings' (1) page.



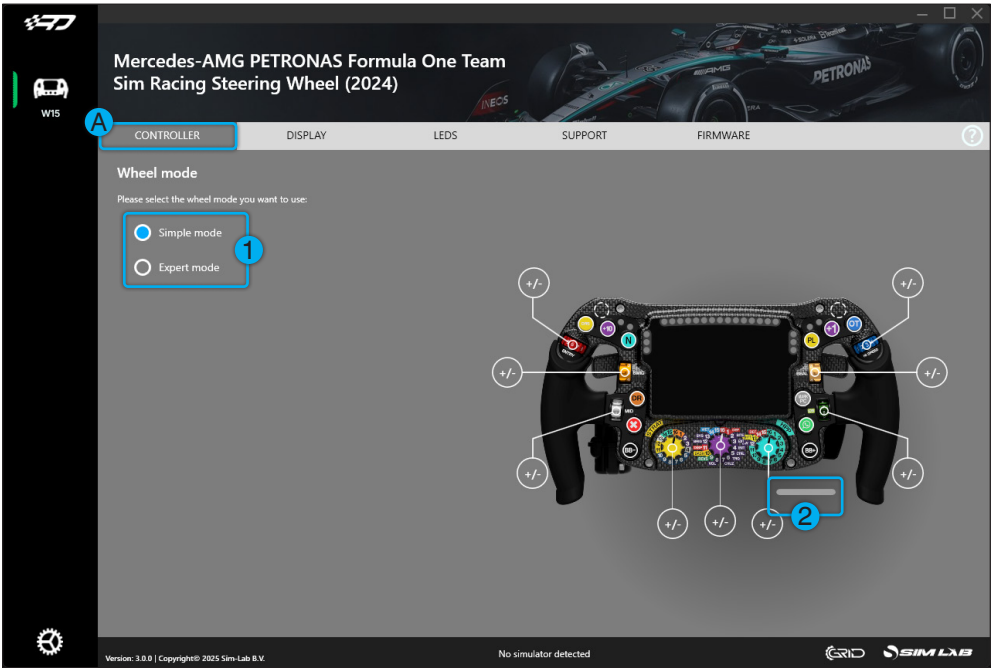
Tick the 'Activate' tickbox next to '**Mercedes-AMG PETRONAS Formula One Team Sim Racing Steering Wheel (2024)**' (2) and its icon (3) should appear on the left side of the screen. Selecting the icon (3) will take us to its device pages.

Device pages

These pages allow you to control, configure and update your device. To keep this manual concise, we only go over the basics or unique functions.

CONTROLLER (A)

This device page focusses more on the mechanical part of controlling the device. Seeing the options mentioned, it is probably clear this page has more to do with the controls on the wheel than its display for example.



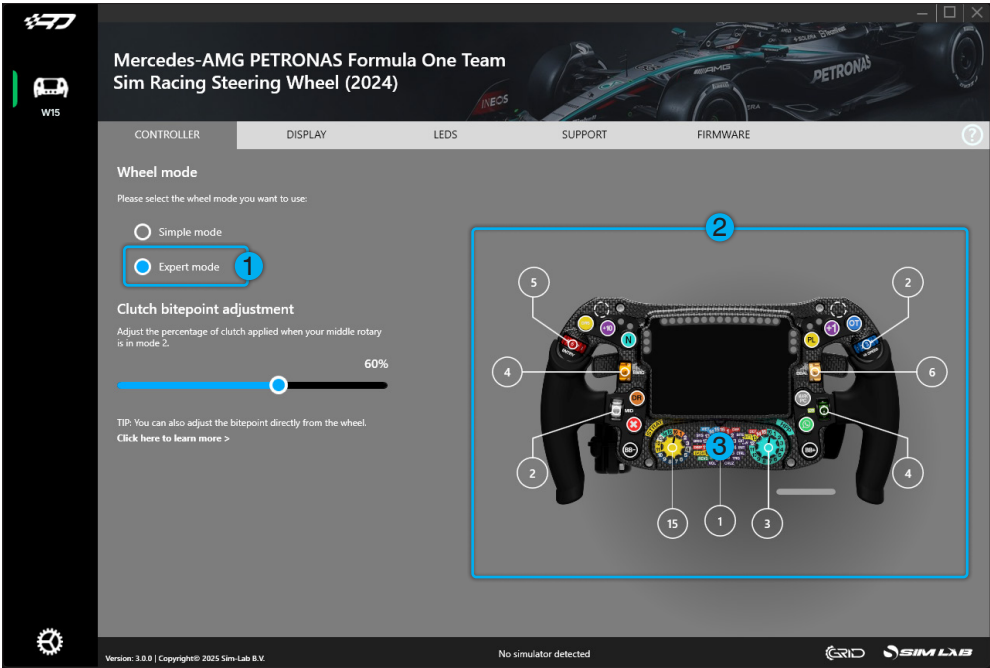
SIMPLE MODE

The left side of the screen initially only shows the ‘Wheel mode’ (1) selector. The default setting is ‘Simple mode’. In short, this means:

- All encoders function as regular encoders, two inputs per encoder being - and +.
- The clutch paddle input (2) has a range from 0-100%

EXPERT MODE

With the 'Wheel mode' (1) set to 'Expert mode' you will notice some changes in the visual representation (2) on the right hand side of the screen.



Every encoder, besides the 'function encoder' (3), can now be selected and individually configured.

By simply clicking on an encoder knob, you can switch from an incremental encoder like in the simple mode, to a positional encoder.

A positional encoder has predetermined positions. The advantage here is you can literally read the setting off of the encoder. This also allows for a mix on how you want to use individual encoder, depending on the circumstances, car or other preferences.

Note: not every sim racing title supports the use of positional encoders.

FUNCTION ENCODER (3)

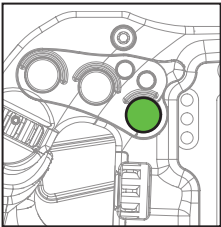
This encoder in 'Expert mode' acts as a function select switch. Depending on its position, certain inputs may behave differently or adjust a specific setting on the wheel/dash or the virtual car. To test these funtions, make sure your sim of choice is running with the 'Mercedes-AMG W15' dash selected in the Dash Gallery.

1 - DEF

This is an 'empty' setting, where all buttons and knobs on the wheel do what they are normally configured to doing. We recommend to using this setting when applying decals.

2 - BITE

This is your start mode as it were. To indicate you are in start mode, the two inner warning LEDs will light up yellow. Also, the clutch paddle will now only output to the bitepoint percentage set. How to fully engage the clutch is by pressing the indicated button (will not be hardcoded later). This will emulate the sort of a clutch start. If you are not a fan of this, simply leave this setting by switching the function encoder to the standard 1 - DEF setting. For more information on setting the bitepoint, please see page 12.



9 - REVS

This is a special function, unique to this steering wheel. When using this function, pressing and holding the assigned button (see page 20) brings up the launch practice mode. With this mode you can practice clutch control. The procedure:

- Set the function encoder to position 9 or REVS.
- Press and hold the assigned 'Launch Practice' button to start a practice session.
- Pull the clutch paddle fully.
- The center 5 RPM LEDs will function as start lights.
- On lights out, drop the clutch.
- Observe measured reaction times.
- Pull clutch fully again for another try.
- Let go of the assigned 'Launch Practice' button to exit this mode.

100			
JUMP START			
REACTION	RELEASE	TARGET	ACTUAL
212	598	47	15

11 - DISP

With this setting you are able to adjusted the brightness of the LCD display.

Using the lower left/right hand side buttons. Press and hold to decrease (lower left) or increase (lower right) brightness on the fly.

Warning: while in this mode, both buttons will be overruled and will not provide output as configured in your sim.

12 - BRIG

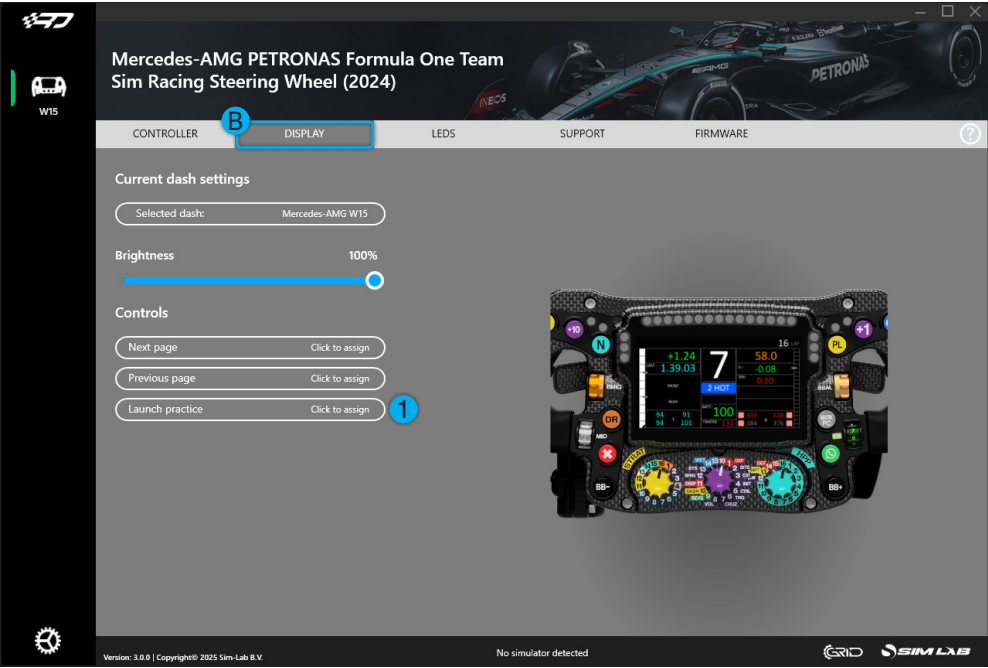
With this setting you are able to adjusted the brightness of all the LEDs.

Using the lower left/right hand side buttons. Press and hold to decrease (lower left) or increase (lower right) brightness on the fly.

Warning: while in this mode, both buttons will be overruled and will not provide output as configured in your sim.

DISPLAY (B)

Almost all of the options found here speak for themselves, although these is one additional option which is unique for this device.



- 'Launch practice' (1)
Assign a push button to activate the pre-start launch practice procedure. This button needs to be pressed to bring up the procedure on the dash. The middle function knob needs to be set to '9 - REVS' for this to be available.
- For more information on the middle function know and the dash, please see Page 21.

For the other device pages, please see the RaceDirector manual as referred to on Page 18 of this manual.

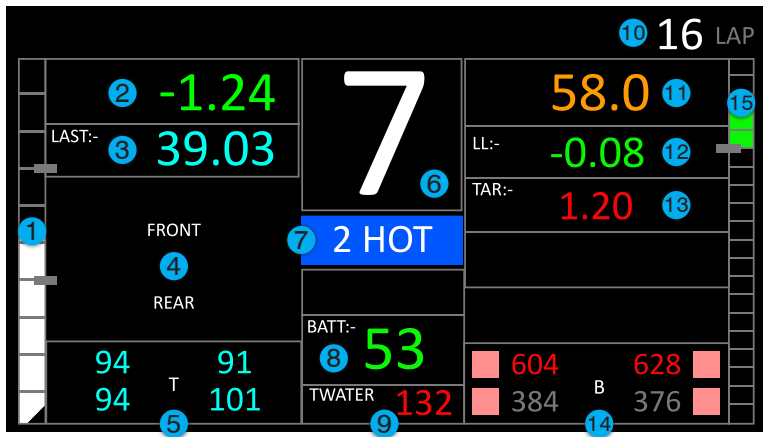
Default dash

We replicated the real dash as best as we could, given the different sim racing titles are available and their feature set.

In this chapter, we will go over each page and its functions.

Main running page

This page is considered your main source of information during a race.

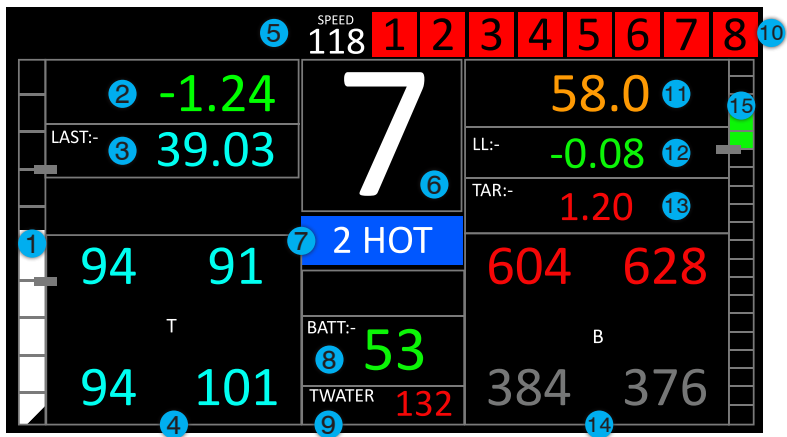


- 1 Battery (ERS) level, matches value found in (8).
- 2 Live laptime delta, this is measuring the difference between your current lap and the session best lap.
- 3 Last laptime. The minutes are not shown here.
- 4 Not used currently.
- 5 Tire temperatures in degrees Celcius, where the top left number is the Front Left, the bottom right number indicates the Rear Right tire.
- 6 The current gear.
- 7 The current deployment/ERS mode.
- 8 The current battery percentage, matching (1).

- 9 The water temperature in degrees Celcius.
- 10 The lap counter.
- 11 The brake balance setting of the car.
- 12 The fuel target delta, of the previous lap.
- 13 The fuel target, as set in RaceDirector. (general dash preferences)
- 14 Brake temperatures in degrees Celcius, following the same layout as (5).
The squares appear when temperature rises above 200°C, the temperature readings will turn red above 600°C.
- 15 The total fuel delta bar, it is divided in increments of 2 tenths per block. This bar calculates the total fuel consumption during the entire session. When the bar shows green, it means you are safe to push, because you used less fuel than the fuel target up to that point in time. Be careful to not overdo it. When pushing too hard, you will down in the red again and will have to manage fuel consumption to be able to finish the race. If you push in the first laps of the race, the bar will go into the red as well, but you will still have time to save some fuel later.

Charging page

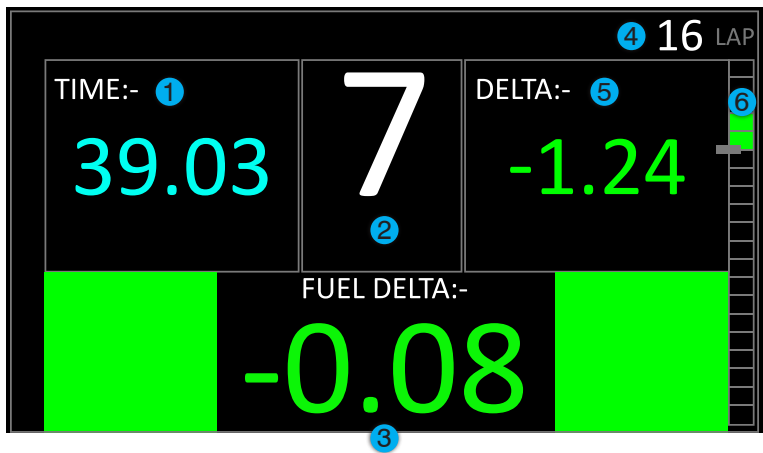
This page is more geared towards qualifying and warmup laps. Of course, you are free to decide which dash page you use when.



- 1 Battery (ERS) level, matches value found in (8).
- 2 Live laptime delta, this is measuring the difference between your current lap and the session best lap.
- 3 Last laptime. The minutes are not shown here.
- 4 Tire temperatures in degrees Celcius, where the top left number is the Front Left, the bottom right number indicates the Rear Right tire.
- 5 The current speed in kilometers per hour.
- 6 The current gear.
- 7 The current deployment/ERS mode.
- 8 The current battery percentage, matching (1).
- 9 The water temperature in degrees Celcius.
- 10 Gear sync, these blocks will dissappear when you have gone through all the gears after exiting the pits.
- 11 The brake balance setting of the car.
- 12 The fuel target delta, of the previous lap.
- 13 The fuel target, as set in RaceDirector. (see the previous page).
- 14 Brake temperatures in degrees Celcius, following the same layout as (5). The squares appear when temperature rises above 200°C, the temperature readings will turn red above 600°C.
- 15 The total fuel delta bar, it is divided in increments of 2 tenths per block. This bar calculates the total fuel consumption during the entire session. When the bar shows green, it means you are safe to push, because you used less fuel than the fuel target up to that point in time. Be careful to not overdo it. When pushing too hard, you will down in the red again and will have to manage fuel consumption to be able to finish the race. If you push in the first laps of the race, the bar will go into the red as well, but you will still have time to save some fuel later.

End of lap screen

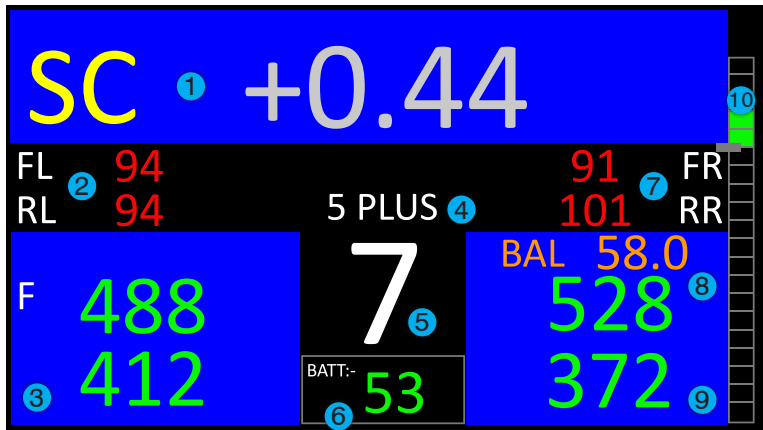
This is a special screen, only showed at the end of a timed lap, for a limited duration. Please see page 24 for more information, as the duration this screen is shown can be adjusted to suit your preference.



- 1 Laptime of the lap just completed. The minutes are not shown here.
- 2 The current gear.
- 3 The fuel target delta of the lap just completed.
- 4 The lap counter.
- 5 Laptime delta, this is showing the difference between the lap just completed and the session best lap.
- 6 The total fuel delta bar, it is divided in increments of 2 tenths per block. This bar calculates the total fuel consumption during the entire session. When the bar shows green, it means you are safe to push, because you used less fuel than the fuel target up to that point in time. Be careful to not overdo it. When pushing too hard, you will down in the red again and will have to manage fuel consumption to be able to finish the race. If you push in the first laps of the race, the bar will go into the red as well, but you will still have time to save some fuel later.

Safety Car screen

This is a conditional screen, only showed during the event of a (virtual) safety car.



- 1 (Virtual) safety car delta.
- 2/7 Tire temperatures in degrees Celcius, where the top left number is the Front Left, the bottom right number indicates the Rear Right tire.
- 3/9 Brake temperatures in degrees Celcius, following the same layout as (5).
The squares appear when temperature rises above 200°C, the temperature readings will turn red above 600°C.
- 4 The current deployment/ERS mode.
- 5 The current gear.
- 6 The current battery percentage.
- 8 The brake balance setting of the car.
- 10 The total fuel delta bar, it is divided in increments of 2 tenths per block. This bar calculates the total fuel consumption during the entire session. When the bar shows green, it means you are safe to push, because you used less fuel than the fuel target up to that point in time. Be careful to not overdo it. When pushing too hard, you will down in the red again and will have to manage fuel consumption to be able to finish the race. If you push in the first laps of the race, the bar will go into the red as well, but you will still have time to save some fuel later.

Authentic LED profile

We worked together with the Mercedes-AMG PETRONAS Esports Team to include an authentic LED profile, matching the (absolute) RPMs of and functions of the virtual car, out of the box.

This profile is loaded by default when you first configure the wheel in RaceDirector, and its LED settings can't be changed. Because of this, this LED profile only makes sense when using a W12/13 (iRacing) or similar high RPM Formula car. For a MX-5 for example, this will hardly (if any) have any LED light up.

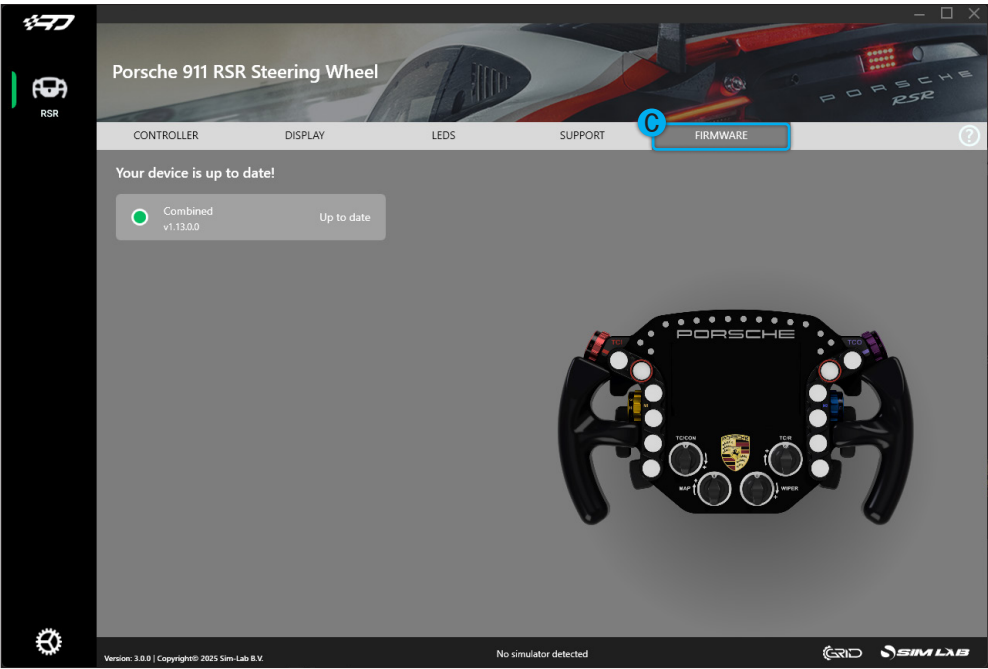
You can still load the 'regular' default LED profile, which will be a generic one for all sorts of virtual cars. This of course can be adjusted to your liking easily as can be reviewed in the previous section of this chapter.

Just to summarize, if you want to create your own LED profile, here is a step by step:

- load the 'Default' LED profile through the LED profile selection menu
- make all the changes you want
- select 'New profile' through the LED profile selection menu
- click 'Save changes to profile' on the right hand side of the window
- enter a name for the new profile
- click 'Save'

FIRMWARE (C)

On this page you can see the current firmware loaded on the device. If your firmware is out of date, we recommend to update it.



RaceDirector keeps tabs on current firmware versions. When it detects a difference, a notification  will let you know more recent firmware has been detected.

When an updated firmware version has been detected, please follow the instructions and click the 'Perform update' (1) button.

RaceDirector will show the progress and will take care of the updating for you. If you see a windows explorer or USB device popping up, don't worry, it is part of the process.

An update for your device is available!

 Controller
v1.14.0.0

Update available
v1.15.0.0

How to update?

Press the button below to automatically install any required updates to your device.

Please ensure your device remains connected during the update procedure.

Contact support if you have any problems updating your device via RaceDirector..

Perform update



Older devices might still require the former firmware update tool. In that case, RaceDirector will tell you what to do.

SimHub Support

For advanced users, we do still support people who prefer using SimHub.

Go to 'Devices' on the left hand side of the screen and choose 'Add device'. Find your new wheel listed as below:



Load your favorite profiles/dash and you are ready for you to go!

Changing the LEDs' functions.

To change the LED effects you need to know their numbering to identify them on the wheel. The following schematic shows the LED numbering on the display.



There should be enough info in the provided default LED profiles to be able to adjust LED settings to your liking. To start building your own profile, we suggest to copy an existing one and change where needed. The advantage is you always have a backup of the default profile to fall back to.

Note: for issues/troubleshooting your SimHub profiles, please refer to SimHub documentation or SimHub support.

Customisation

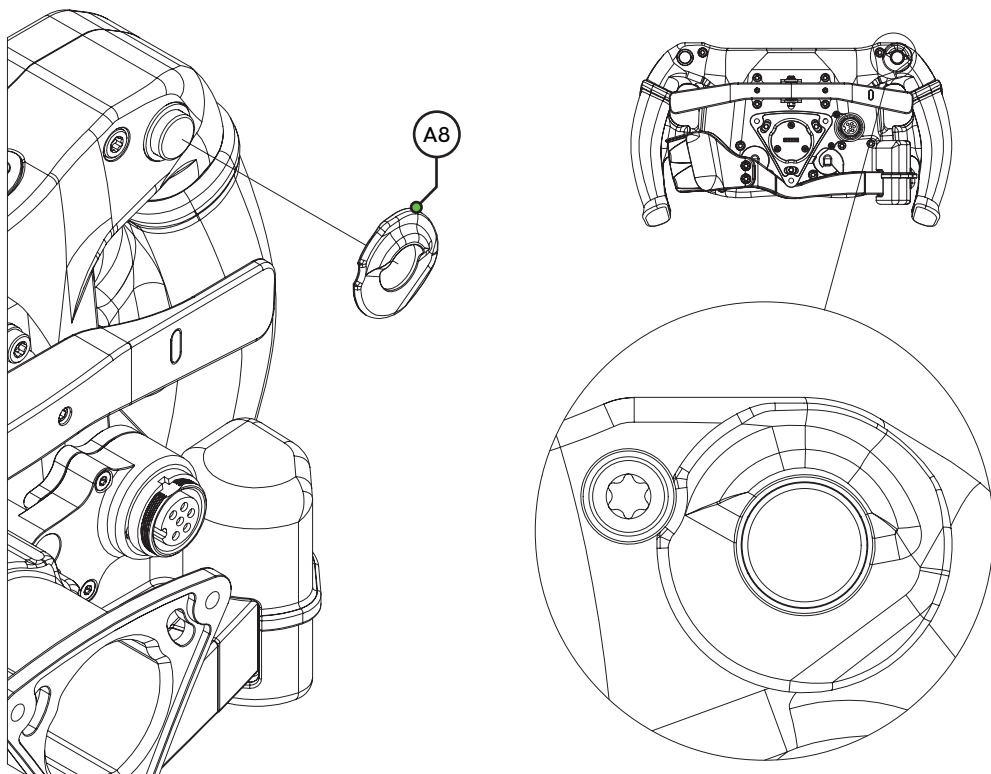
We appreciate our customers being fans of Mercedes-AMG PETRONAS Formula One Team and we very much hope to have done a service in that regard. With the addition of some extras, we have hoped to have gone the extra mile.

As far as decals go, we supplied all original ones to replicate real life occurrences of the wheel. Added to these, we supply our own sim racing oriented decals to go all the way in making this your own version of your favorite steering wheel.

Kimi Antonelli

Out of the box, the wheel mostly comes in the configuration used by Kimi Antonelli. As an added bonus, we supplied rear button guards (A8) as a little extra something. This is a simple part which you can stick to the rear of the wheel, over the rear buttons. It has an adhesive backing applied to it for you to carefully stick it into place. Use the cut away for the bolt (see below) to align and place the guard correctly.

We made left and right versions, please verify you apply the appropriate one.



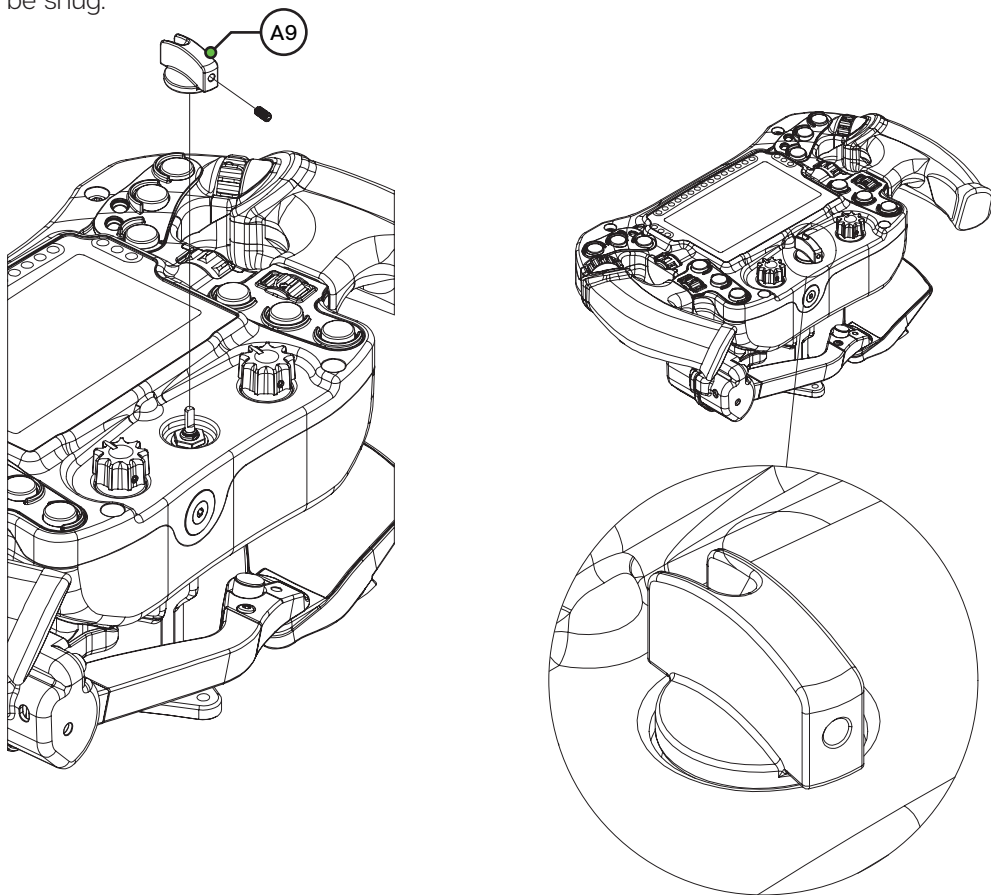
George Russell

For fans of George, we added his own set of front encoder decals (A6) and even his own signature function encoder knob (A9).

To remove the original decals on the wheel, you will have to remove all encoder knobs. Please note, the setscrews are very small, be careful loosening these.

The decals are found in the decal sheet kit, the ones with the blue square shape in the middle. Installing them on the wheel is a rather precise task and requires some patience, and tweezers.

Lastly, re install the two outer front encoder knobs and add the iconic Russell encoder knob which features on his own wheel. Seat the knob all the way down and tighten the set screw onto the flat of the shaft. Don't over tighten this, it just needs to be snug.



Bill of materials

IN THE BOX			
#	Part	QTY	Note
A1	Mercedes-AMG Petronas Formula One Team Sim Racing Steering Wheel (2024)	1	
A2	Lumberg to USB-A Coiled Cable	1	
A3	USB Extension Cable	1	3m/10 ft long.
A4	Passthrough cable Molex to USB-A	1	
A5	Tool kit	1	
A6	Decal kit	1	
A7	Lumberg plug	1	
A8	Antonelli Rear Button Guard	2	Left and right version.
A9	Russell Function Encoder Knob	1	
A10	Bolt Captive M5 X 14	3	
A11	Bolt DIN 912 M5 X 12	3	Regular cap head bolt.
A12	Locking Washer	2	

More information

If you still have some questions regarding assembly of this product or about the manual itself, please refer to our support department. They can be reached at:

support@sim-lab.eu

Alternatively, we have a Discord server where you can hang out or ask for help.

www.sim-lab.eu/discord

[Product page on the Sim-Lab website:](#)

