WARNING! Assembled platform will have exposed motors moving parts. Never operate it with small children around or use optional protection cover.

Please check and if needed put back the plugs for the power to the motors and sensors they must match the colors or numbers. This is very important. **Never change wiring**. Mixed of colors in connectors can damage the motors and platform controllers. If you think that you need to reverse one or more motors, do it in SRS software.

If your control box doesn't have colored motors plugs then:

The right Motor is the brown plug and Motor 1,

The left Motor is the black plug and Motor 2

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Do not put ANY controllers on the platform before it is completely tested and proven to be working as desired. Once assembly is complete, attach the seat ONLY, i.e. no other items what-so-ever. When you have ensured proper behavior only then start to add controllers one by one, but completing movement tests with a person seated in the pilot seat after the addition of each controller to platform weight.

For majority of frames you need to slide the mover inside, not on top of it. Motors always should be facing back. As an example here is the PlaySeat EVO frame view.

from the back:



And from the front:



If you are not sure what bolts to use, here are links to a 1:1 scale template for Letter and A4 sized paper, ensure you print without extra borders or spacing:

For US Letter Paper : <u>https://dofreality.com/hardware\_template\_Letter.pdf</u>

For A4 Paper : https://dofreality.com/hardware\_templateA4.pdf

Never ever leave platform powered unattended and or when not in use. The motors are constantly performing micro adjustments. If they overheat (above 70C) they may lose power.



# 4. Software installation

Review the following video <u>https://youtu.be/CGZ4N-SRfso?t=122</u> and download latest SimRacingStudio (SRS) application from <u>https://www.simracingstudio.com/download</u>

SRS is the "brains" of the system, and will allow you to test the connection of the platform to your computer. You must have SRS running when playing games, as it is this software which tells the platform what the game needs it to do, so the platform is able to move correctly with the game action.

#### 4.1 INSTALL LICENSE

Go to **SETUP**- > **LICENSE** tab and **ACTIVATE** your license by entering the license number you received in an email from either SRS or DOF Reality (Check your spam folder). If you can't find your license, you can recover it by going to: License | Recover | then enter the email used to purchase your DOF hardware.

#### 4.2 CONFIGURE HARDWARE

- 4.2.1 Go to SETUP-> Hardware
- 4.2.2 Select Manufacturer DOFREALITY
- 4.2.3 Select your model.
- 4.2.4 Click SAVE

4.2.5 Wait up to 30 seconds for "Motionbox" to change to a green tick (bottom right corner of hardware status):

Green = Connected and License OK

Yellow = Connected but license not activated

Red = not connected to your DOF motion platform



If the Motionbox does not connect, reboot your PC. If after you a reboot, it is still not connected, try these instructions to manually connect:

https://docs.google.com/document/d/10PoaStPtHJCo5WiMVVhPfOkooxE7GzrzfS7FDFSkoPM/e dit?usp=sharing

If after following the instructions SRS is still does not connect, please check section 5.2 of this manual or contact support.

#### 4.3 TEST HARDWARE



Once connected, use your mouse to move TEST sliders and see if platform is moving and in the correct direction.

#### 4.4 GAME SETUP (PC INSTRUCTIONS)

For the game console, please check here: https://www.simracingstudio.com/console



Check if your game requires anything special. Go to **SETUP-> GAMES** and click CONFIG or INSTRUCTIONS if needed.

There are 4 possible statuses:

- 1) **Game not installed**. SRS did not detect your game. Some games require you to run the game first for SRS to see it. Run the game, Quit and restart SRS.
- 2) Ready to play. SRS detected game installed. Should be good to go.
- 3) **CONFIG**: Press the button and SRS will try to automatically configure to the game to your SRS console. If it is successful, it will say "Ready to play".
- 4) INSTRUCTIONS. If SRS can't connect to the game, it may be because they are only available in the "Game Menu", follow the instructions on the screen from the "Games" section. Most instructions are for changes in the game, not in SRS. Instructions will never go to "Ready to play" as we can't validate if you have successfully made the manual changes in the game or not. You can also check this article for more details on manual game setup https://www.simracingstudio.com/manual-game-config

If you need additional help to make a supported game to work with DOF platform, please contact us by clicking here <u>https://www.simracingstudio.com/change-log</u>

#### 4.5 PLAYING THE GAME

SRS will automatically connect to the game once have started the game, although you MUST have SRS running when you open the game in order to engage the platform. Note that some games require you to start a race to connect. Some games connect from the main menu.

There are 3 game statuses which advise on the status of SRS. Check the PROFILE IN USE box on the top right of SRS.



1) **STAND BY**: Game not running



- 2) **GAME RUNNING**: Game is detected...no telemetry to move platform has yet been received. For Some games, this is NORMAL as they only send telemetry once you are on the track or in the air...
  - a. In this status, you also unlocked the TUNING -> MOTION settings. Now you can make changes to the tuning parameters (See below).
- 3) **TELEMETRY DATA**: All good. If the MOTIONBOX status is green and SRS is in this status, the platform will be moving for this game. Make sure platform boxes are ON... ③
  - a. Intellibox is for Wind (if you didn't buy the wind accessory, you will not have this), Led and Tach are used if you bought an LED or Tachometer as a separate accessory for your racing system. Shakebox is for the buttkicker.
  - b. Try to mouse over the status icon to get more info.

4.6 TUNING (Fine tune the platform to move exactly the way you want)

The SRS App has been tuned by our team to provide a great experience out of the box.

If you want to fine-tune the motion to your preferences, you can do it simply by changing the sliders in SRS by going to **TUNING -> MOTION**.

This can be carried out ONLY while the game is running. If the game is running, SRS app will automatically select this game and or vehicle.

Once you have adjusted your tuning, click **SAVE** and next time you open the game (along with SRS), these settings will be the loaded automatically. For more profiles visit

https://www.simracingstudio.com/forum/motion-profiles



#### 4.7 SRS tuning tips are available here:

https://www.youtube.com/watch?v=giHMrIjiUFE

https://www.simracingstudio.com/forum/motion-profiles

https://www.simracingstudio.com/post/motion-too-weak

https://www.simracingstudio.com/post/motion-how-power-and-smoothing-affects-my-ride

https://www.simracingstudio.com/post/test-works-game-doesn-t

Additionally, you can find further help in the FAQ section of SRS Website: <u>https://www.simracingstudio.com/copy-of-download-faq-1</u>



# 4.8 VR (Virtual Reality)

The DOF motion platform can be used with any VR headset. There are some subtleties to be considered when combining VR with a motion platform. The motion platform will move the player's head, which will move the VR headset, which will automatically affect the amount of movement you see in the VR image. Most of the time, the degree of motion is not enough to impact gameplay and can be ignored like in this example video <a href="https://youtu.be/oi8yvWzZXVw">https://youtu.be/oi8yvWzZXVw</a>. If the additional motion of the VR image is too extreme, you might need to turn down the motion of the platform to a lower setting. This will minimize the "hopping/swimming" type of effects in the image and will give you a smoother experience with VR.

#### Software Solution for Motion Compensation

If the amount of movement in the VR image is too much and you do not want to turn down the motion, you can utilize motion compensation software which removes the platform movement from the VR image. You have few options:

- 1) 1 Best way is to use OpenXR <u>https://www.simracingstudio.com/forum/motion-profiles-1/srs-openxr-motion-compensation-guid</u>
- 2) Alternative SimRacingStudio Motion compensation premium feature https://www.simracingstudio.com/post/motion-compensation

3) OpenVR Motion Compensation is the current software to be utilized for motion compensation which can be downloaded here: <a href="https://ovrmc.dschadu.de/">https://ovrmc.dschadu.de/</a>. OpenVR Motion Compensation will track the movement of a trackermounted on the platform and remove the motion of the platform from the movement of the VR headset. OpenVR Motion Compensation can work with both types of VR headsets (base stations and inside-out tracking).

OpenVR Motion Compensation Tutorial Video:

https://www.youtube.com/watch?v=1MqGO46xdtl&tOpenVR Motion

Compensation Install and Setup: https://ovrmc.dschadu.de/en/setup

There are primarily two types of VR headsets and they require the tracker to be mounted differently. Ones that utilize base stations (outside-in) for tracking of the VR headset movements such as the Valve Index, HTC Vive Cosmos, Pimax 5k/8k\* and the original Oculus Rift (CV1). The other type utilizes cameras in the headsets that provide inside-out tracking which include the HP Reverb/G2, Oculus Quest/Quest 2/Rift S\*\*, Samsung HMD Odyssey+ and other Windows Mix Reality (WMR) type headsets.

For VR headsets that utilize base stations, a tracker or controller (Valve Index Controller, HTC Vive Controller, HTC Vive Tracker) must be mounted on the motion platform and be in-line of sight by all the base stations. It does not matter where the tracker is mounted as long as its visible to all the base stations, however typically they are mounted near the head at the top of the chair.

For VR headsets that utilize inside-out tracking via the cameras on the headset, a controller (Oculus Touch Controller or WMR Controller) must be mounted on the front of the motion platform so it is in-line of sight of the cameras on the headset.

In either case, the tracker must be 1) firmly mounted to the platform and 2) must utilize some type of vibration mitigation. Vibration mitigation can be achieved by 1) adding additional mass/weight to the mount so it absorbs vibration energy and 2) using a vibration absorption material like soft rubber or Sorbothane.

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Another potential software solution is the older version of motion cancellation called OpenVR Input Emulator. Though it is no longer being developed, there is still limited support from the community via its download page here: https://github.com/matzman666/OpenVR-InputEmulator/releases. HTC Vive/Vive Pro: https://dofreality.com/HTCMotionCancellation.pdf Oculus Rift setup: https://dofreality.com/OpenVR.pdf

\* For Pimax users, the PiTool can potentially be utilized for VR Motion Compensation: https://www.pimax.com/pages/pitool. In PiTool, turn on a Valve Index controller, select it as the sensor in PiTool "Motion Cancellation' and open the game. However, support is not guaranteed and it may not work properly.

\*\* The Oculus driver for SteamVR is made by Valve and not by Oculus as they only support their own closed ecosystem. This causes issues with 1) big motions on Oculus devices might see a black border on the edge of your view and 2) rotation is not always compensated correctly.

#### Hardware/Non-Software Based Solutions for Motion Compensation

1) For VR headsets with inside-out tracking, consider covering one of the cameras with tape. It will prevent the headset movements from being tracked in the environment and provide some VR motion compensation without significant side effects and the need to use motion compensation software: https://www.youtube.com/watch?v=ksy7AxjbcD0

2) For the Oculus Rift, attach the sensor to the platform using the DOF Oculus mount and cover the cameras on the VR headset. This disables the 3D tracking, which prevents the camera from jumping around in the game. However, this method also disables the rotation tracking, so if the motion platform turns on its yaw axis, you will have to turn your head to look forward in game. It is suggested to limit the Yaw movement in your motion platform software to make the rotation just enough for you to feel then you will not have to turn your head to look forward in the game. This of course is not ideal but doesn't require motion compensation software.

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3) For original Oculus Rift (CV1) users, the Oculus Rift sensor could be mounted directly to your DOF Reality platform to provide simulated motion compensation without the need to use motion compensation software; however, due to recent Oculus update this solution may or may not work. DOF Reality includes a mount for the Oculus Rift sensor in your DOF hardware shipment which should be placed at the front of the platform looking back at the VR headset. Mount the bracket to the two holes at the back of the wheel deck plate so it extends up and out to the front of the platform.

#### **Additional VR Motion Compensation Resources**

OpenVR Motion Compensation Tested Devices: https://ovrmc.dschadu.de/en/testeddevices XSimulator Motion Compensation Thread: https://www.xsimulator.net/community/threads/openvrmotioncompensation.14576/

XSimulator Motion Cancellation Thread: https://www.xsimulator.net/community/threads/vr-motion-cancellation-time-to-test.10241/

HTC Vive Tracker Mount Example: <u>https://www.youtube.com/watch?v=BPmo5kmk5CY</u>



# 5. Troubleshooting & Maintenance

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The simulator does not need much maintenance, but you should check for loose bolts or other abnormalities periodically (we recommend once a month).

- Confirm the security of the nuts and bolts every few weeks.
- Clear the dust filters on the three fans on top of the cover.
- Listen for any abnormal noises, if encountered please follow the instructions below on how to

grease the ball joints attached to the motor arms.

Some play in the gearboxes and arms joints is unavoidable. It is the nature of the gearboxes to have play, otherwise, they cannot move. Some gearboxes have less play when new, but with time they all develop some play. It is normal to have up to 10% of the motion range. Motors can be warm after hours but should not overheat above70C.

# 5.0 Control box errors buzzer decoding.

After control box controller reboot. There few internal platform tests performed and the buzzer reports errors and information with the short and long beeps sequence.

| Information                                      | Details  |  |  |
|--|--|--|--|
| —— one <b>long</b> : using firmware from bank 1  | For redundancy each controller has two         |  |  |
|  | firmware banks. Either of them can be used.    |  |  |
| — two long: using firmware from                  | For redundancy each controller has two         |  |  |
| bank 2   | firmware banks. Either of them can be used.    |  |  |
| three <b>long</b> : box is not                   | But if power is ON there is power issue in the |  |  |
| powered  | box like a) bad AC power cable (check it) b)   |  |  |
| USB is connected to the box but there is no      | bad power switch c) if fans are spinning:      |  |  |
| power. It is normal to hear it when you turn OFF | faulty internal power supply on the            |  |  |
| the box and keep USB plugged. After it the       | motherboard inside the box. Contact our        |  |  |
| controller might reboot and beep about firmware  | tech support support@dofreality.com            |  |  |
| bank and again for no power present.             |  |  |  |
|  |  |  |  |
| For <b>long</b>                                  | firmware model configuration not present.      |  |  |
|  | Contact our tech support                       |  |  |
|  | support@dofreality.com                         |  |  |

| lssue  | location   |  |  |
|--|--|--|--|
| <ul> <li>one short: feedback sensor<br/>issue</li> </ul>           | one, two or two or two or three long beeps refers to the specific motor/port number. Check sensor phone connector and wire.  |  |  |
| <ul> <li>- two short: motor self-<br/>calibration issue</li> </ul> | one,two orthree <b>long</b> beeps refers to the specific motor/port number. Check that nothing blocks motor and gearbox from moving both directions. Check motor power connector and cable. Check platform weight balance. |  |  |
| <ul> <li> three short: motor or<br/>power issue</li> </ul>         | one, two or two or<br>three <b>long</b> beeps refers to the specific motor/port<br>number. Motor is not performing as it should. Check<br>motor power connector and cable. Check platform                                  |  |  |

weight balance.

Examples: Two long beeps after the control box powered – the firmware from bank

2 is used.

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Two short and three long beeps – there is an issue with motor/port 3 calibration.

# 5.1 Firmware update.

- 1) Donwload , unzip to a local folder <a href="http://dofreality.com/tools.zip">http://dofreality.com/tools.zip</a>
- Start "DOF Reality Tools (run as Administrator).exe" app as Administrator. If you see blue screen request , click "More info" and "Run anyway"
- Turn off Control box power, close SRS and SMC apps, disable your PC Bluetooth
- 4) Follow app instructions.
- 5) you might need to run the app again to moke sure both firmwaere slots are updated.

You can use this video guide https://youtu.be/-Hj8ck2sOkM

# 5.2 If one or more of your motors are stuck in an improperposition and don't seem to respond

#### This chapter is applicable only to SENSOR based motors $\,$ arrow

If a motor gets into the "protection zone", it may stop responding. If this occurs, the mechanical position isso far out of line that the software locks. To unlock it:

- 1) Power off both control boxes
- 2) Close all SRS applications
- 3) Download <a href="https://dofreality.com/tools.zip">https://dofreality.com/tools.zip</a>

4) Unzip all archive contents into any local folder on your PC

5) Run Tools app - there no viruses or malware there. You can ignore antivirus warnings. Follow onscreen instructions and click "Start SMC3Utils" Button.

6) <u>Only if you can't get previous step to open SMC app without error</u>: Open with notepad file SMC3Utils.ini and set COMM\_PORT= to proper COM port number from your Windows Device Manager (see 5.1) Each control box has a specific port number. Test one box at a time. Start/run SMC3Utils.exe. If you are getting an error messages about the COM port communication, you haven't set the port number properly in the previous step.



7) Select the problematic motor . Most commonly, in the SRS application, the motor will be shown as OFF and the green line on the chart for it is below the blue line.

8) In the in the left bottom of the SMC app **Out Mode** select 'Motion' and than switch to 'Manual' radio button.Write down current Max Limits and Clip Input values (on the right of the SMC3Utils window) and reduce them to 0. Normal is as per 5.3.20.

9) In SMC3Utils click 'sine' and click small OFF button in the top left-hand part of the screen, so it becomes ON. Select the button next to the motor you are adjusting. If you can't set motor to ON, zero all other motors Clip Input and Max Limit to unlock it as one motor locks all.

10) Power ON the platform

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11) The motor should move back to normal position. If you want to check the motion, you can select the 'Sine' radio button and see that it moves appropriately. The green line is a reflection of the measured motor position (where it actually is), the blue line is the desired motor position (where it theoretically should be). These will not be perfectly aligned, but should be close. 2) If the motor arm has recalibrated, reset the original Max Limits and Clip Input values (you need to increase Clip first and then Max as max cannot be bigger than Clip) and close SMC3Utils.

# 5.3 Motor arm is not horizontal in the neutral position

It is important to follow proper instructions for you motor feedback type.

A) You may have ENCODER based motors. They look like this:

These motors have auto calibration function that is performed each time you power on. Each motor will move to the limit and back to the middle – normal position. If one or few motors fail to do so the system will indicate it with the corresponding beeps (see 5.0) and get into the self testing mode until the issue is fixed. I this happens, you need to caeck that all connectors

(power and phone RJ12) are properly plugged to the proper ports of the control box and do full power cycle (turn power off and disconnect USB for at least 20 seconds). If an issue persist you need to:

0. Before starting, fully exit everything else on the PC possible, especially SimRacingStudio and SimHub(check the Windows task manager to make sure).

1. Download <u>https://dofreality.com/tools.zip</u> , unzip all contents into any local folder on your PC. RunTools app - there no viruses or malware there. You can ignore antivirus warnings. **Wait until box stops beeping**. Follow onscreen

instructions and click "Start SMC3Utils" Button. You should net see or ignore any errors.

2. <u>Only if you can't get previous step to open SMC app without error</u>: Open with notepad file SMC3Utils.ini and set COMM\_PORT= to proper COM port number from your Windows Device Manager(see 5.1) Each control box has a specific port number. Test one box at a time. Start/run SMC3Utils.exe.If you are getting an error messages about the COM port communication, you haven't set the port number properly in the previous step. You should

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net see or ignore any errors.

3. Once SMC is open and you can see a value for Calcs/sec in the mid bottom of SMC (if not SMC is not started properly). You can select motor in

question and it should move back and force (if you need to test Motor 1 you need to select Motor 2 and then back Motor 1) and chart looks like this: Motor should move in both

directions **and** green line on the charts should be moving as well. This confirms that motor is working and encoder is working as well. If motor was not moving at all or only in one direction, please contact our tech <u>support@dofreality.com</u> detailing the tests you did and results. If motor was moving , but green line not –rotate the coupler between motor and SFU gearbox with your fingers and see if the green line on the



chart will be moving in both directions. If not contact our tech <a href="mailto:support@dofreality.com">support@dofreality.com</a> detailing the tests you did and results.

#### 20. Check the **default** settings

are:

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| Fpid / 1 | - + | Fpwm = 20kHz    | - + | Max Limits = 30    | - +     |
|----------|-----|-----------------|-----|--------------------|---------|
| Kp = 130 | -+  | PWMmin = 0      | -+  | Clip Input = 50    | - +     |
| Ki = 3   | -+  | PWMmax = 180    | - + | Deadzone = 0       | - +     |
| Kd = 10  | -+  | PWMrev = 200    | -+  |                    |         |
| Ks = 5   | -+  |                 |     | Arduino SMC3 ver   | 23,07   |
|          |     | Tx: [ A 01 98 ] |     | Windows Utility ve | er 1.01 |
| - N#     |     | Dv: 1 A 73 6B 1 |     | LIDD Port 20017    |         |



#### 5.3

# B) You may have SENSOR based motors. They look like this:

The resting position of the black motor arm should be:

If your motor arm is out of the natural/level position it should be reset. Correct calibration is the default resting arm position of the motor. Setting this



correctly fixes several problems commonly experienced by users. To recalibrate the motor arm, you will need the small "allen wrench" or "hex key" provided inyour hardware kit.

Over time the motor-sensor coupler bolts may get loose and the neutral motor position can get malaligned from normal (often the arm moves just a bit higher than horizontal). If this is the case perform tests (see section 5.4) tomake sure motor is moving correctly first or consult DOF Reality support.

Please review the video of the calibration procedure: https://www.youtube.com/watch?v=Wa6hRdMB4vA

- Before starting, fully exit everything else on the PC possible, especially SimRacingStudio and SimHub(check the Windows task manager to make sure).
- Download <u>https://dofreality.com/tools.zip</u>, unzip all contents into any local folder on your PC. RunTools app - there no viruses or malware there. You can ignore antivirus warnings. Follow onscreen instructions and click "Start SMC3Utils" Button.

2. <u>Only if you can't get previous step to open SMC app without error</u>: Open with notepad file SMC3Utils.ini and set COMM\_PORT= to proper COM port number from your Windows Device Manager(see 5.1) Each control box has a specific port number. Test one box at a time. Start/run SMC3Utils.exe.If you are getting an error messages about the COM port communication, you haven't set the port number properly in the previous step.

- 3. Make sure the DOFR control box power is OFF (make sure motor connections and the USB remainfully plugged in).
- 4. Using a wrench and the large allen wrench, disconnect the silver threaded "motor arm" from the motor that needs to be re-calibrated. Disconnect only from motor side and leave hanging freely. If you have a damper attached, you will need to disconnect that as well. The motor needs to be free to move.
- 5. On the side of the motor pointing towards the center of the platform, use a small allen wrench to

loosen the "coupler" (silver tube like roller). You only want to loosen the two small allen screws on the MOTOR SIDE. The other side is the "sensor" that connects to the plastic cover. Do not touch the sensor side allen



#### screws.

6. On your PC go to the SMC3 application. In the in the left bottom of the SMC app **Out Mode** select'Motion' and than switch to 'Manual' radio button.

7. With a computer screen-shot (or your phone) take a picture of the SMC3 screen with the current settings and values (IMPORTANT). The default settings are:

|    | Fpid / 1 | -+  | Fpwm = 20kHz    | -+              | Max Limits = 30    | -+              |  |
|----|----------|-----|-----------------|-----------------|--------------------|-----------------|--|
|    | Kp = 130 | -+  | PWMmin = 0      | -+              | Clip Input = 50    | - +             |  |
|    | Ki = 3   | - + | PWMmax = 180    | - +             | Deadzone = 0       | - +             |  |
|    | Kd = 10  | -+  | PWMrev = 200    | -+              |                    |                 |  |
| Ks | Ks = 5   | -+  |                 |                 | Arduino SMC3 ver   | 23,07           |  |
|    |          |     | Tx: [ A 01 98 ] |                 | Windows Utility ve | er 1.01         |  |
|    |          |     | Dv: 1 A 73 6B 1 | Dv: 1 A 73 6B 1 |                    | LIDD Dort 20017 |  |

8. At top left of SMC3 tool now click "ON" the motor that needs calibrated.

- 9. Click the "step 1" buttons to say "step 10"
- 10. Click "KP" down to "60"
- 11. "PWMmax" to "60" and "Ki" to "0" (zero).
- 12. At this point the "Max Limits" and "Clip Input" should also have adjusted down to 0 as well. If not, then click them both to "0".
- 13. Power ON the DOFR control box.
- 14. By hand, slowly rotate the "coupler" (silver tube like roller). It will move the green graph line in theSMC3 tool. Make sure this is happening. If not, start over.
- 15. Now slowly rotate the coupler until the small black motor arm is positioned at the "2:30" position ason a clock (pointing forward, AWAY from the black portion of the motor). If you are calibrating the rear yaw/traction loss motor it should be left at a 90 degree angle.
- 16. Power OFF the DOFR control box.
- 17. Now looking at the SMC3 program tool, slowly rotate the coupler until the green line sits in the middle of the graph slightly below the blue line. At this point the green line should be moving right with the blue line.
- 18. Now take the allen wrench and without moving the "coupler", properly tighten ONE of the allen screws we previously loosened(as you do this make sure green line stays in position on SMC3 with the blue line).
- 19. Tighten then the second allen screw.
- 20. Now in the SMC3 application, turn all values back to original settings(from your earlier screen- capture or phone picture).

| Fpid / 1  | -+ | Fpwm = 20kHz    | -+ | Max Limits = 30    | -+      |
|-----------|----|-----------------|----|--------------------|---------|
| Kp = 130  | -+ | PWMmin = 0      | -+ | Clip Input = 50    | - +     |
| Ki = 3    | -+ | PWMmax = 180    | -+ | Deadzone = 0       | - +     |
| Kd = 10   | -+ | PWMrev = 200    | -+ |                    |         |
| Ks = 5 -+ |    |                 |    | Arduino SMC3 ver   | 23,07   |
|           |    | Tx: [ A 01 98 ] |    | Windows Utility ve | er 1.01 |
|           |    | Dv: 1 A 73 6R 1 |    | LIDD Port 20017    | _       |

21. Power on the control box.

22. On the SMC3 tool at the bottom left area, click "Sine".



- 23. If we have been successful the green and blue line on the SMC3 will start moving up and downalmost together with the black motor arm we just re-calibrated.
- 24. Exit SMC3 tool and you are ready to go. If this is not fixing your problem, please review and repeat these steps very carefully. If you are still not able to recalibrate the motor arm to a horizontal position, contact DOF Reality.

# 5.4 Something is wrong with my platform!

1) Check all cables and motor connections, including any loose wires inside the control box.

2) Close and exit SimRacingStudio.

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- 3) Download <a href="https://dofreality.com/tools.zip">https://dofreality.com/tools.zip</a>
- 4) Unzip all contents into any local folder on your PC.

5) Run Tools app - there no viruses or malware there. You can ignore antivirus warnings. Follow onscreen instructions and click "Start SMC3Utils" Button.

6) <u>Only if you can't get previous step to open SMC app without error</u>: Open with notepad file SMC3Utils.ini and set COMM\_PORT= to proper COM port number from your Windows Device Manager (see 5.1) Each control box has a specific port number. Test one box at a time. Start/run SMC3Utils.exe. If you are getting an error messages about the COM port communication, you haven't set the port number properly in the previous step.

7) Power ON the platform

8) Set it to 'sine' click Motor 1 and Motor 2 and 3. Using Windows Snipping Tool do send us (<u>support@dofreality.com</u>) screen shots of the SMC Util screen charts for each motor. It will also be helpful to include a short video clearly demonstrating the problem.

# 5.5 I have trouble installing SRS (Antivirus detects it as a threat)

SRS uses a variety of methods to read the telemetry from the game and some of those methods will trigger antivirus software. SRS is completely safe, configure your antivirus software to allow an exception for SRS. This will typically solve the problem.

### 5.6 Simulator does not move in-game

Make sure the SRS application is open and running in the background. This connects the simulator to your gaming software. If you have already confirmed this, click the "Auto Install" button from within the SRS Game section. For some games, you will need to adjust the game settings following this guide:

https://www.simracingstudio.com/download.

If you have completed all this, and your platform still does not move, please Open a Ticket by contacting <a href="mailto:support@dofreality.com">support@dofreality.com</a> .

# 5.7 Simulator used to work in the game, but stopped

This can happen if the connection is lost to the computer or Windows Defender (or other antivirus software) have deemed the software a threat. Windows Defender is notorious for this.



Please investigate with your antivirus software. Usually, an SRS reinstall fixes this or you can add an exception for SRS from within your antivirus software application.

# 5.8 The motors make small adjustments all the time

This is because the motors always have power flowing through them and are always in a ready state to be able to move the rig quickly without delay. The small movements of the motors will typically disappear when there is weight on the rig, or it is in use.

# 5.9 The simulator behaves strangely while playing games

There are many reasons you may experience this behavior, but the most common reasons are:

- The simulator is not in balance.
- The simulator does not have the right settings for you. (We supply generic settings, but they might not match your preferences, weight distribution, or accessory setup).
- The rig might be too heavy.

# 6 Repairing the simulator

DCF REALITY

The simulator should under no circumstances be repaired by unauthorized personnel without consulting us first. Failing to comply may cause damage to equipment and/or injury to the personnel.

# **Technical Specifications**

Motion Simulator for computer gaming Brand: DOF Reality Model: DOF REALITY M2

Power input: 100-120/210-240VAC, 50/60Hz Power consumption: 700Watt Peak current: 5.8/3.2A Short-circuit rating: 20A IP number: 1P190305.DR0W93

Total Weight: 23.850 kg

Made in Ukraine by: "DOF REALITY" LLC Zaporizhzhya, Harchova, 17/94, Ukraine, 69014



EN 60204-1:2006/AC:2010, EN 60335-2-82:2003/A1:2008, EN 60335-1:2012+A11:2014; EN 55014-1:2006+A1:2009+A2:2011; EN 61000-3-2:2014; EN 61000-3-3:2013. 2019

http://dofreality.com/CE.pdf