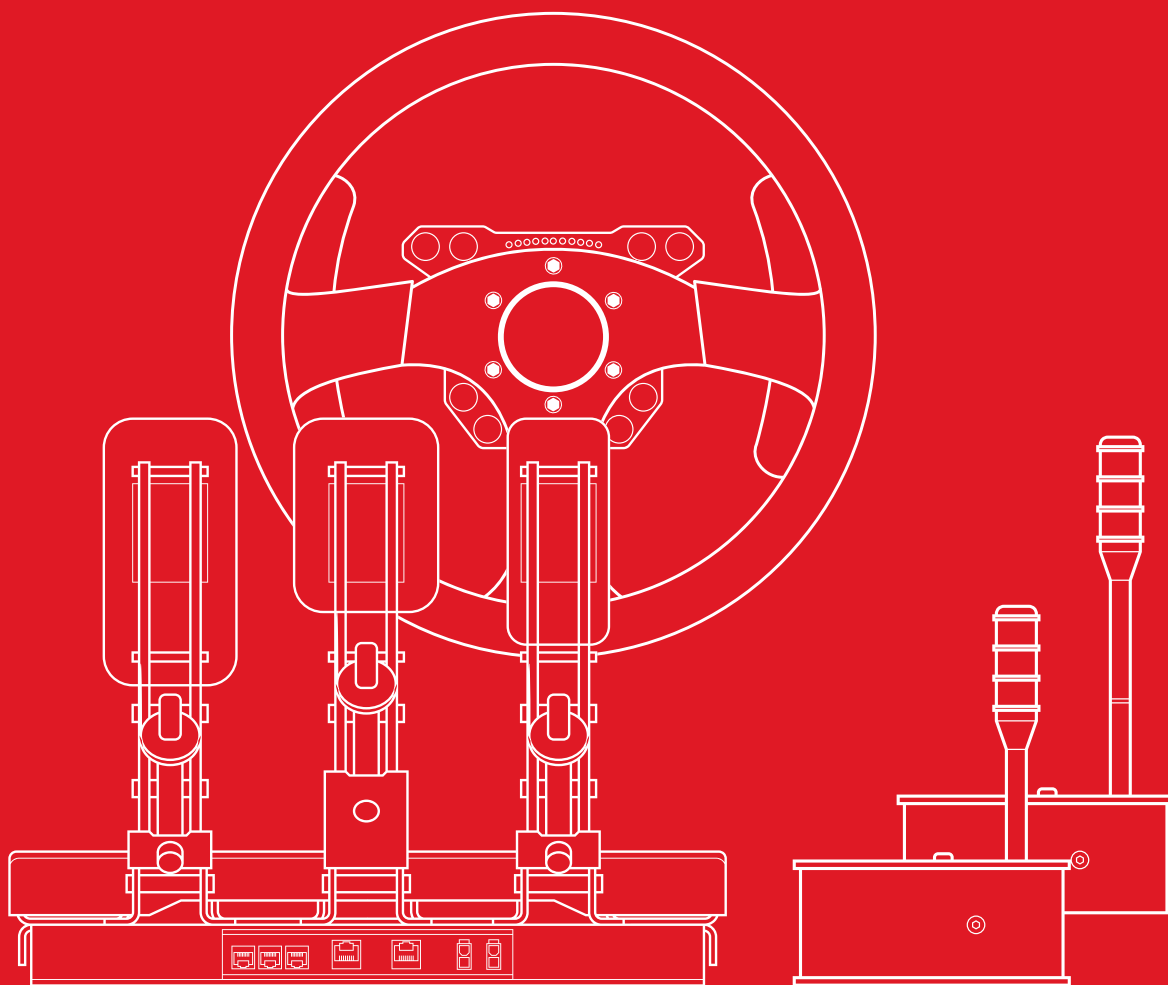


QS-DD-20 AND ACCESSORIES

User Manual



QUBICSYSTEM

Qubic System is not only motion platforms, from now it is also a wide range of sim accessories. The QS-DD-20 is an extraordinary direct drive wheelbase intended to be used with Qubic System motion cockpits. QS-DD-20 includes all necessary sockets to connect Qubic System's pedals, steering wheel controller, and the unique shifter which can be turned into a handbrake. This perfect direct drive base contains all necessary wiring and accessories needed for a fully immersive experience.

Join our sim racing channel at the Qubic System YouTube

<https://www.youtube.com/c/QubicSystem>



NEWS & EVENTS

The latest news from the simulation world.
QubicSystem.com/News



CHECK OUR SOCIAL MEDIA

Everything you wish to know is here!
facebook.com/qubicsystem



SUPPORTED GAMES

Racing games and professional simulation software.
QubicSystem.com/Supported-Games

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1. DEVICE DESCRIPTION

The QS-DD-20 is a steering wheel controller with connection sockets for pedals, shifter and handbrake which can be obtained separately. QS-DD-20 is intended to be used as steering controller for various simulations.

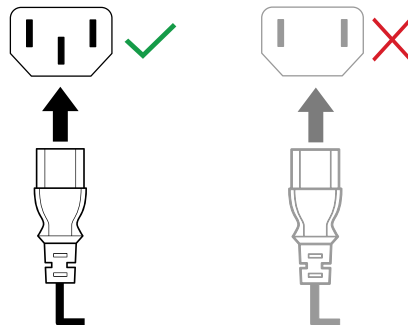
2. SAFETY PRECAUTIONS

INFO

Read all safety instructions before installing and using this product. Save this document for future reference. If ownership of this product is transferred, be sure to include this manual.

WARNING

Check if the power supply cable has grounding connection in the plug (with 3 pins). In order to reduce risk of electric shock **DO NOT** use plug without grounding connection (without center pin).



WARNING

QS-DD-20 is not intended for use by children under 16 years of age. Close supervision and safety instruction is required when this product is used by or near children or people with reduced physical, sensory or mental capabilities. Keep the packaging away from small children as it poses a suffocation risk.

WARNING

It is forbidden to interfere with the device to be compatible with other devices.

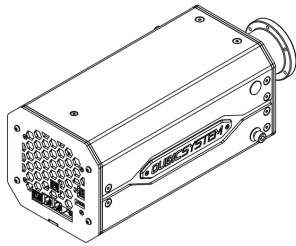
- Use the QS-DD-20 only for its intended purpose, according to instructions.
- Unplug the QS-DD-20 from the power supply if it is not used for an extended period or when there is a need to perform hardware installation, maintenance, servicing or repairs.
- Turn off the QS-DD-20 when it is not in use.
- The QS-DD-20 was designed for indoor use only - **DO NOT** store or use the product outdoors.
- Keep the QS-DD-20 away from the heat sources, high humidity, water, and other liquids. **DO NOT** store in cold place where water condensation may occur.
- **DO NOT** disassemble the product. Any tampering with or altering the product will void the warranty, poses a serious risk of electric shock, and may irreparably damage the product.
- Keep the power cord plug and the socket dry, clean and dust-free.
- Protect the power cord from damage caused by being stepped on, rubbed against, or pinched.
- **DO NOT** use the QS-DD-20 if the ambient temperature is below 4° Celsius (39° Fahrenheit) or above 45° Celsius (113° Fahrenheit).
- **DO NOT** use the QS-DD-20 if it has been damaged, or any component is broken or missing. Please contact technical support.
- **DO NOT** use attachments or replacement parts not recommended or approved by the manufacturer. If you have to replace the power cord use only certified one with the same rating as replaced one.
- Do not grab, hold or insert anything into the steering wheel or driving shaft to stop the rotation.
- Use Motion Lock button or switch off the power to stop the motions of the device.
- Keep away cables, clothing, hair and other items that could tangle into the rotatory shaft.
- At least once a month test if Motion Lock button is working correctly - after pressing there shall be no noticeable force feedback when moving the steering wheel.

WARNING

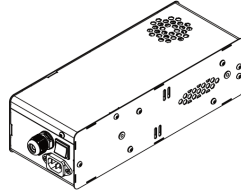
In case if the motions are not stopped and there is noticeable force feedback after pressing the Motion Lock button, **DO NOT** use the device and contact technical support.

3. LIST OF COMPONENTS

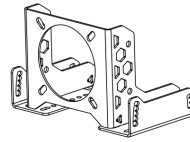
QS-DD-20 base set components:



**QS-DD-20
STEERING WHEEL**



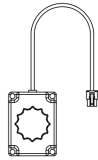
**QS-PA320-48
POWER BOX**



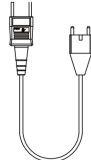
**MOUNTING
BRACKETS**



**ADJUSTABLE
HANDLES
(x 4)**



**MOTION LOCK
(x 1)**



**POWER
SUPPLY CABLE
(x 1)**



**USB CABLE
(x 1)**



**M-BUS
TERMINATOR
(x 1)**



**M8 PLASTIC
WASHER
(x 4)**



**DIN 9021 - 6,4
WASHER
(x 4)**



**DIN 912 - M8x16
BOLT
(x 4)**



**DIN 985 - M6
NUT
(x 4)**

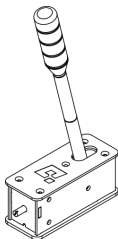


**ISO 7380-1 - M6 x 20
BOLT
(x 2)**

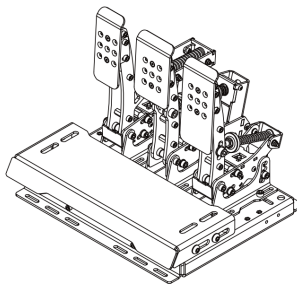


**DIN 125 - A 6,4
WASHER
(x 2)**

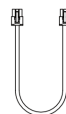
QS-DD-20 additional accessories (not included in the base set):



**SHIFTER /HANDBRAKE
(x 1)**



**QS-P3-60
PEDALS
(x 1)**



**PEDALS
CONNECTION
CABLE
(x 1)**



**BUS
COMMUNICATION
CABLE
(x 1)**



**DIN 912 - M6 x 20
BOLT
(x 4)**



**DIN 125 - A 6,4
WASHER
(x 4)**



**DIN 985 - M6
NUT
(x 4)**

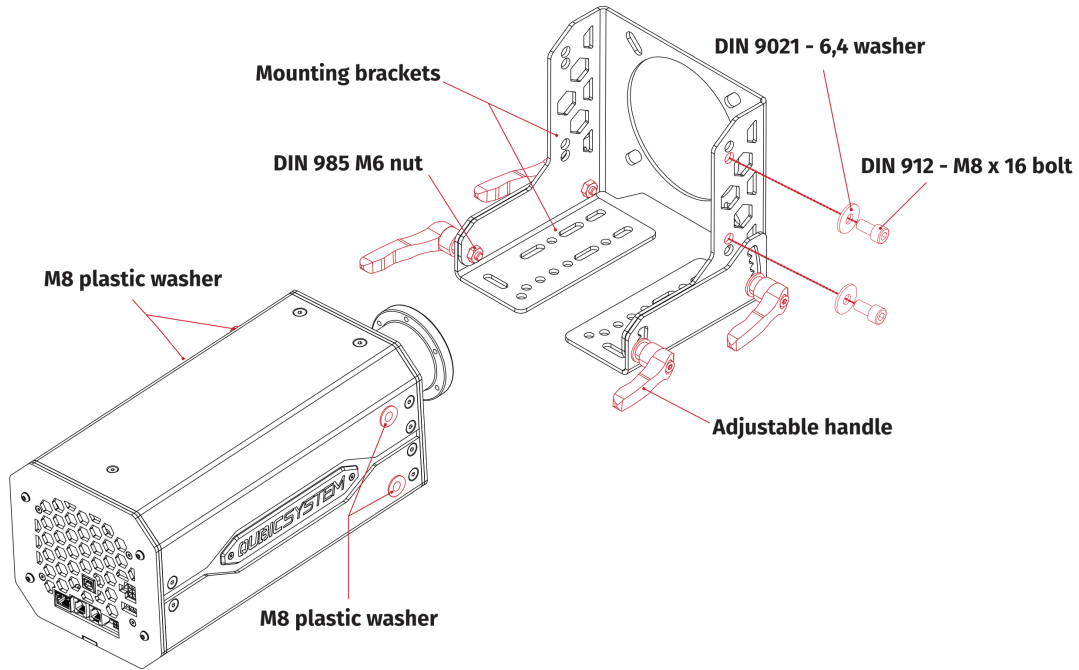


**BRAKE PEDAL
DUMPERS
(x 6)**

4. INSTALLATION

4.1. CONNECTING MOUNTING BRACKETS

In order to connect steering wheel module with mounting brackets connect it using side mounting points with M8 plastic washer inserted on both side as shown on the illustration:

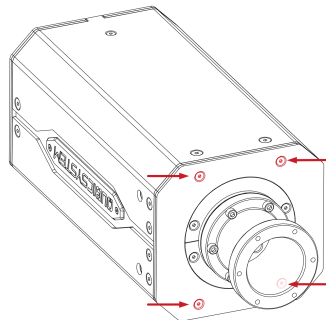


WARNING

DO NOT use front threaded holes to mount the steering wheel module to the cockpit. Front mounting holes are reserved for mounting additional accessories. Unscrew 2 x cover bolts and use ISO 7380-1 - M6 x 20 bolts with DIN 125 - A 6,4 washers for mounting accessories.

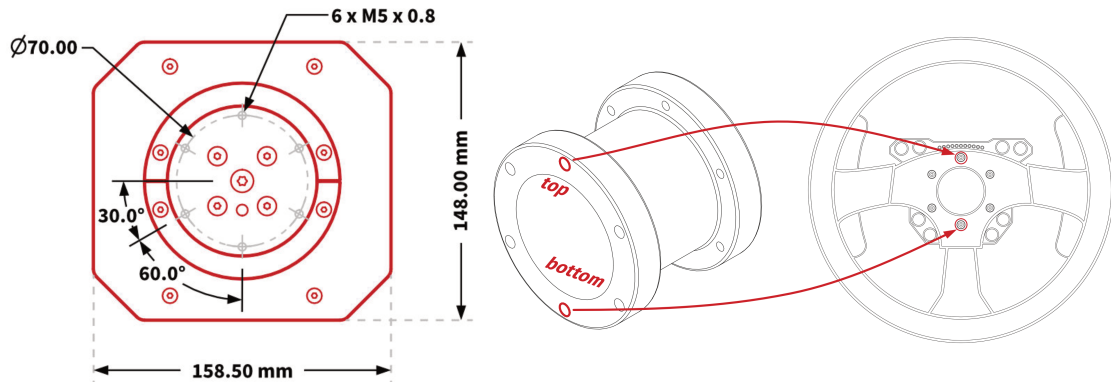
THREADED HOLES RESERVED FOR MOUNTING ACCESSORIES (DASHBOARD ETC.)

DO NOT USE FOR MOUNTING STEERING WHEEL MODULE WITH THE COCKPIT

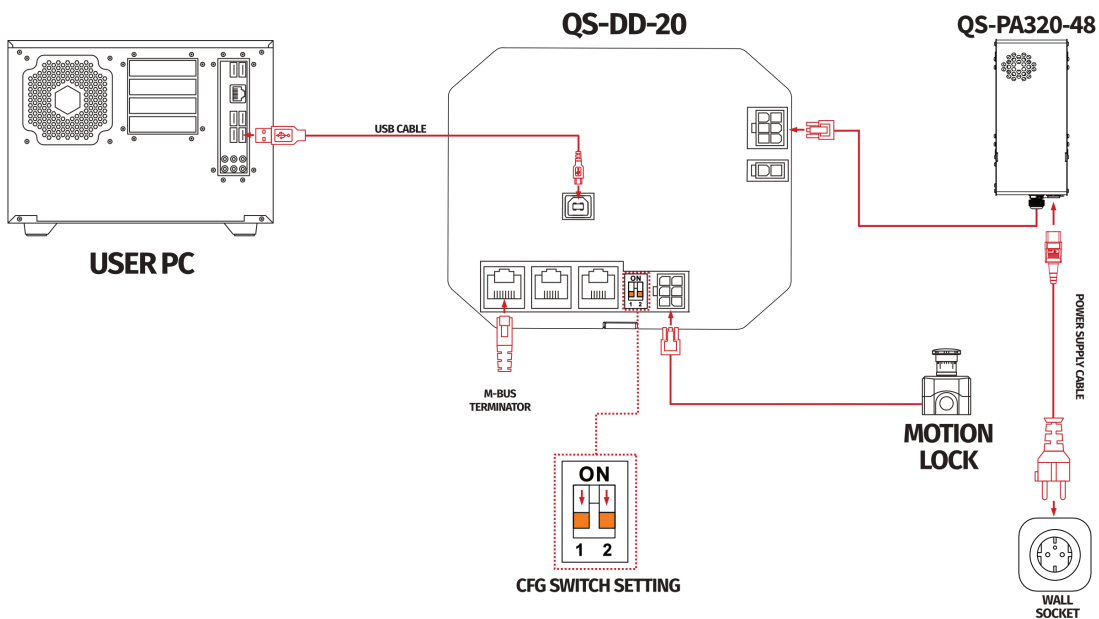


4.2. CONNECTING STEERING WHEEL

To install the steering wheel (not included in the set), connect it with the flange by screwing in the connection bolts provided with the steering wheel. Steering wheel dish size shall be ϕ 70 mm with 6 mounting holes. Align the top and bottom of the flange with the steering wheel as indicated on the **TOP** and **BOTTOM** stickers which are located inside the flange:



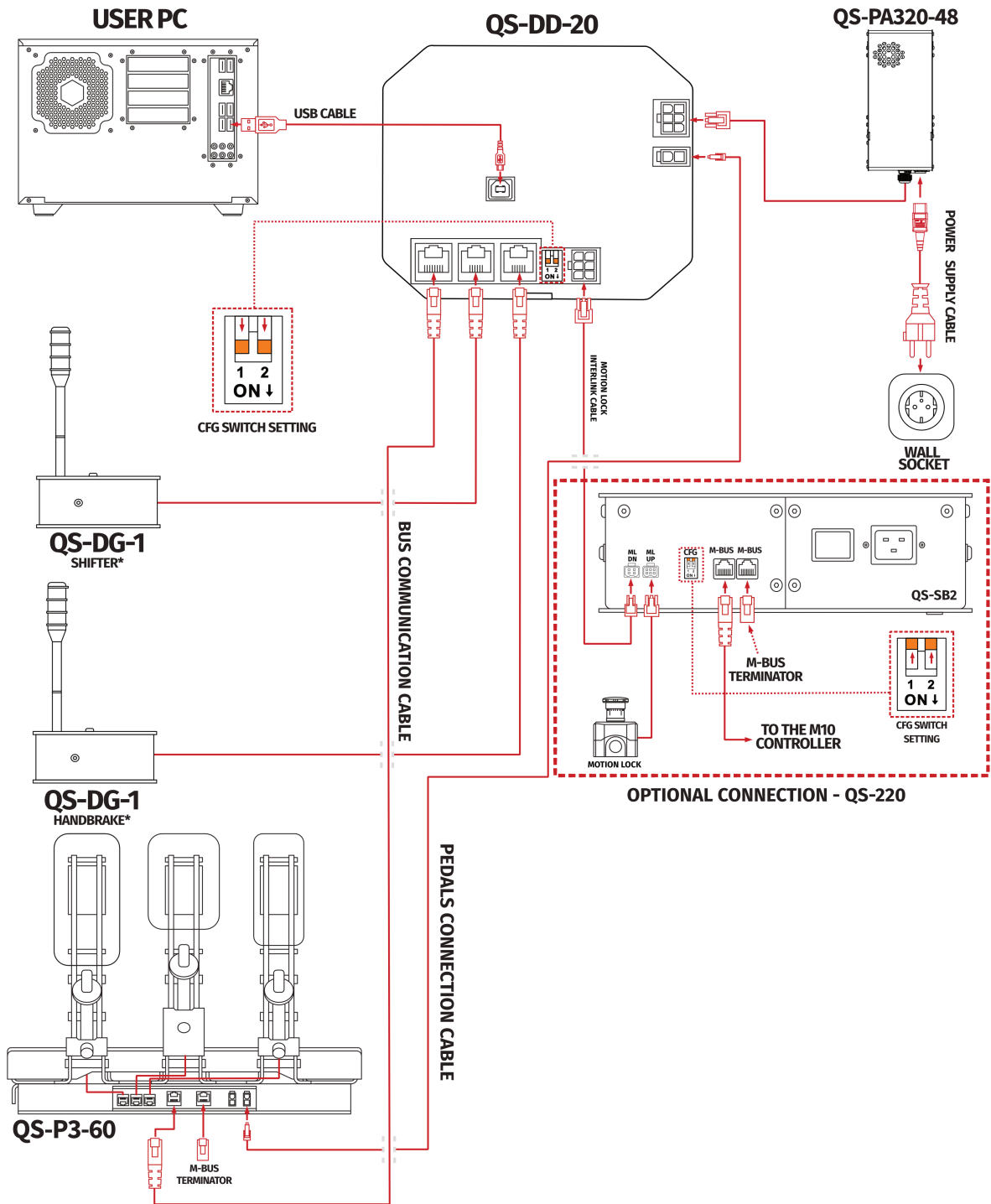
4.3. CONNECTING DEVICES (BASE SET)



WARNING

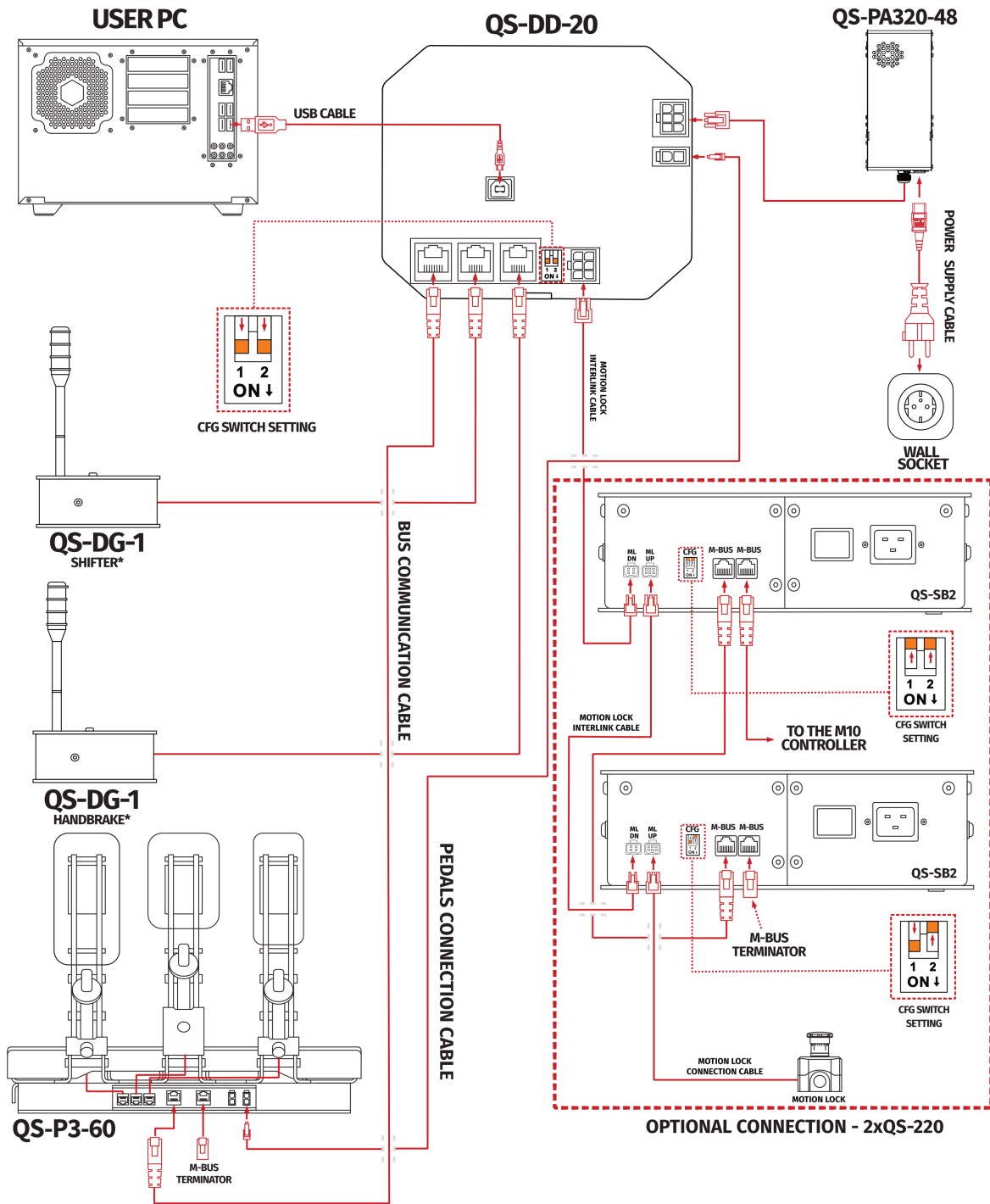
- When changing CFG switch setting the main power must be **SWITCHED OFF**
- When changing the CFG Switch setting **FIRMLY SET THE SWITCH** into lower or upper position. Do not leave the switch in the floating position (neither up or down position), otherwise the device will not work.

4.4. CONNECTING WITH OPTIONAL COMPONENTS



*Check section 6.4 for shifter/handbrake configuration

4.5. CONNECTING WITH 2 X QS-220 SET



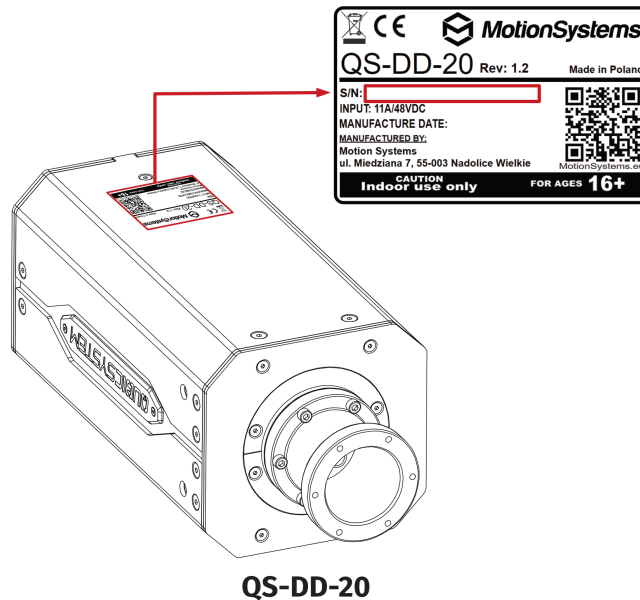
*Check section 6.4 for shifter/handbrake configuration

5. SOFTWARE

QubicManager is professional and specialized software for the platform and is click and play compatible with all major racing and flight titles. The QubicManager is a powerful engine, yet it is easy to use meaning you can adjust levels of motion, bumps, roll and pitch with a click of a button.

5.1. DOWNLOAD AND INSTALLATION

The **SERIAL NUMBER** required to access software download can be found on the underside of the steering wheel module housing. It's printed on the rating label in the **XXXXXX-XXXXXX-XXXXXX-XXXXXX** format.



Software installation procedure:

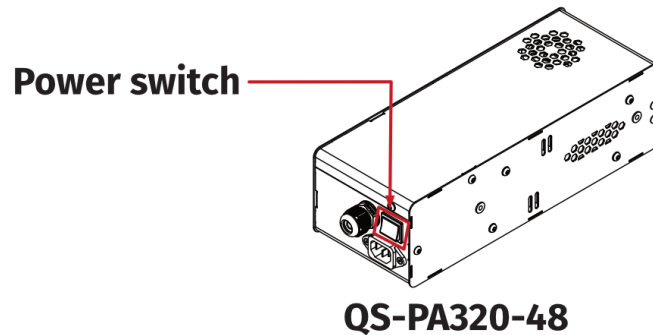
1. Connect the devices according to the interconnections scheme - see section 4.3 or 4.4
2. Download QubicManager from [QubicSystem.com/Download](https://www.QubicSystem.com/Download)
3. Enter the serial number located on the identification label.

INFO

To check your serial number you can download a small program that can read code directly from your device when it is connected via USB : [Download link](#) or visit [QubicSystem.com/Download](https://www.QubicSystem.com/Download)

4. Proceed with the installation steps and launch the application.

5. Turn on the device by switching on the power switch button on the QS-PA320-48 power box.



6. Check position of Motion Lock Switch, unpress if needed.
7. The QS-DD-20 will perform a start-up calibration.

WARNING

DO NOT touch the steering wheel during start-up calibration.

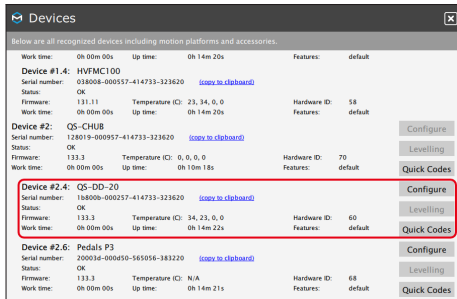
8. If QubicManager has recognized the QS-DD-20 correctly, the status of the device visible in the lower left corner will change to **Connected**.
9. Check **Action Center** on the right side panel for a list of actions that requires attention. It is possible to solve them one by one or by pressing the **Resolve All** button. Firmware update may require additional confirmation in the dialogue box.
10. Go to **Tools and Diagnostics → Devices** and select **Configure** to configure connected devices .

Below are all recognized devices including motion platforms and accessories.

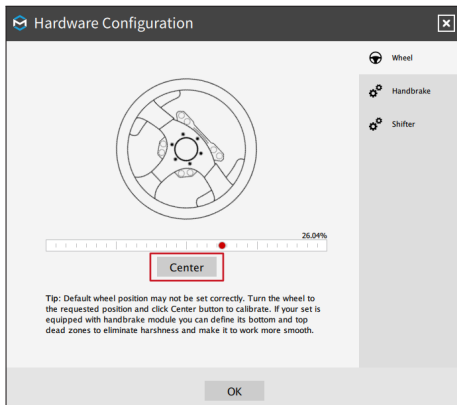
Device #1: OS-4xx						<div style="border: 2px solid red; padding: 2px; display: inline-block;">Configure</div> Levelling Quick Codes
--------------------------	--	--	--	--	--	--

6. DEVICES CONFIGURATION

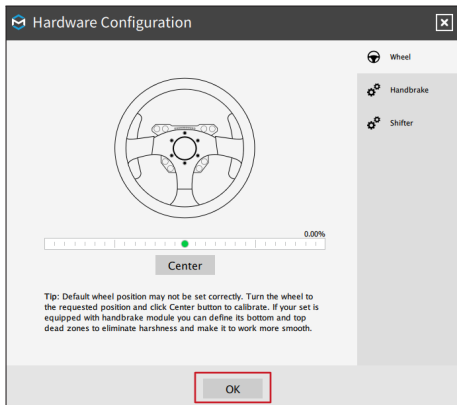
6.1. ADJUSTING STEERING WHEEL



1. To adjust steering wheel select the **Configure** button in **Devices** tab of **Qubic-Manager**. Steering wheel will be recognized as **QS-DD-20** in the devices list.



2. **Rotate the steering wheel** and adjust the center point to your likings, select **Center** button to save the position.



3. After setting center of the steering wheel to your liking select **OK** button, the configuration will be saved and used in the simulations.

INFO

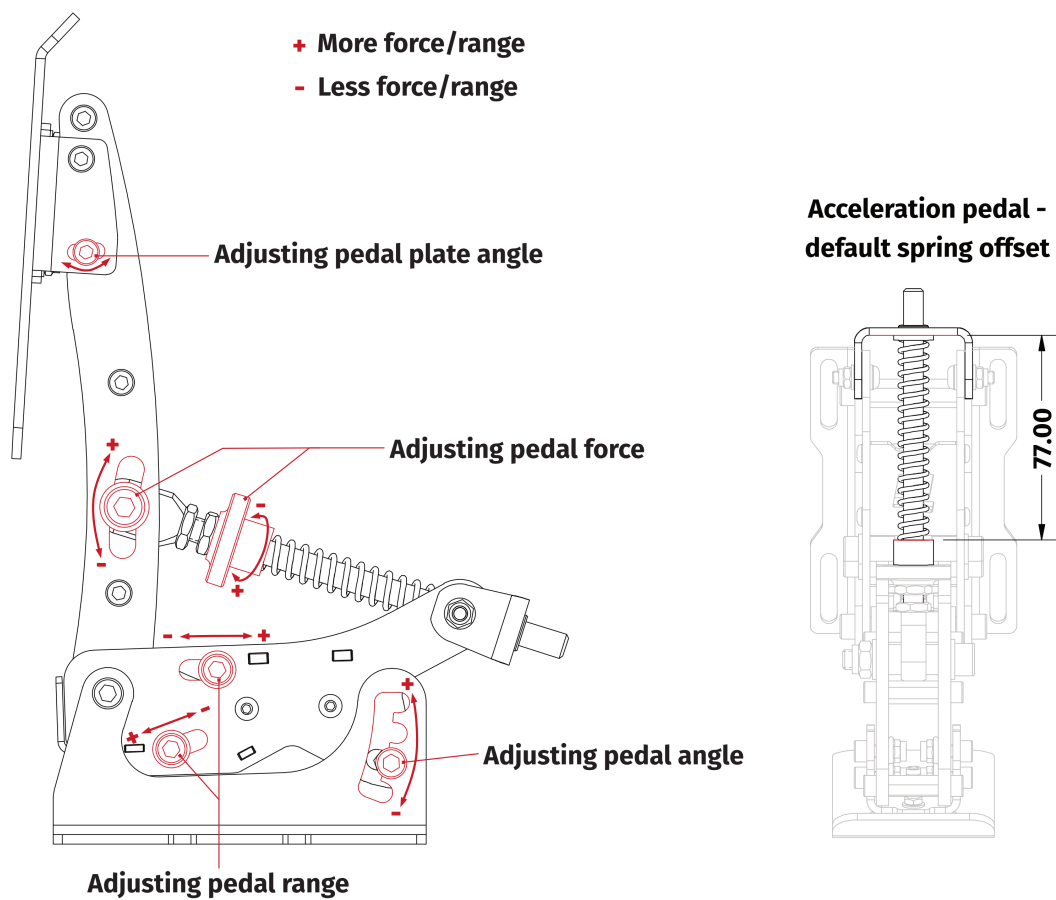
Steering wheel controller arrives with pre-adjusted factory settings

6.2. ADJUSTING PEDALS

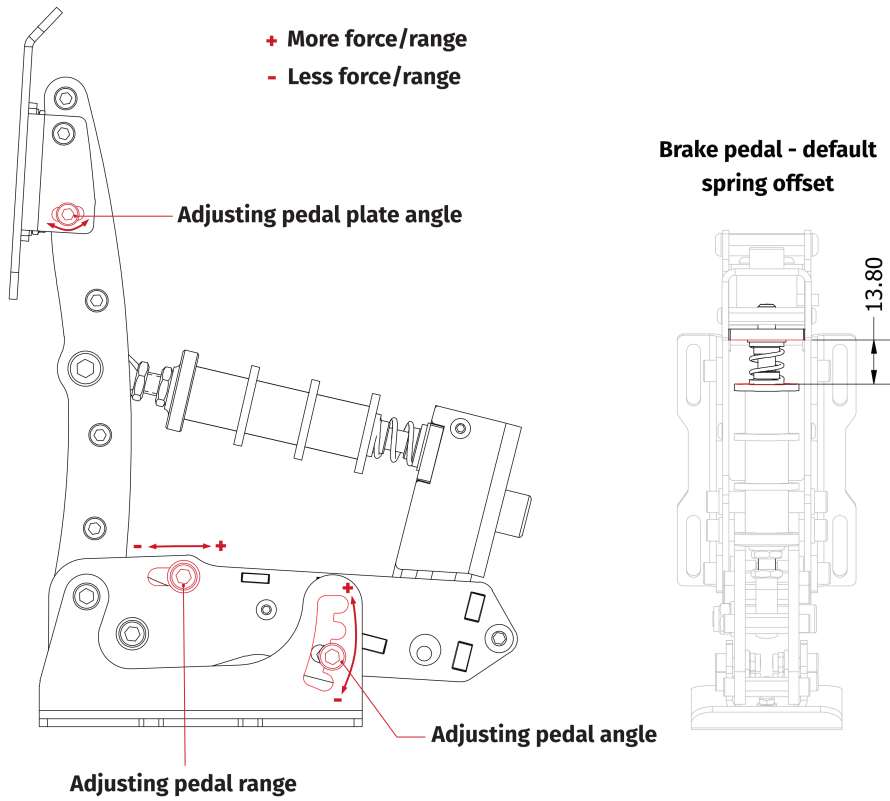
6.2.1 MECHANICAL ADJUSTMENT

Pedals arrives with pre-adjusted factory settings, if you wish to change it unscrew the adjustment bolts using hex key and change position of the pedal as shown on the illustration :

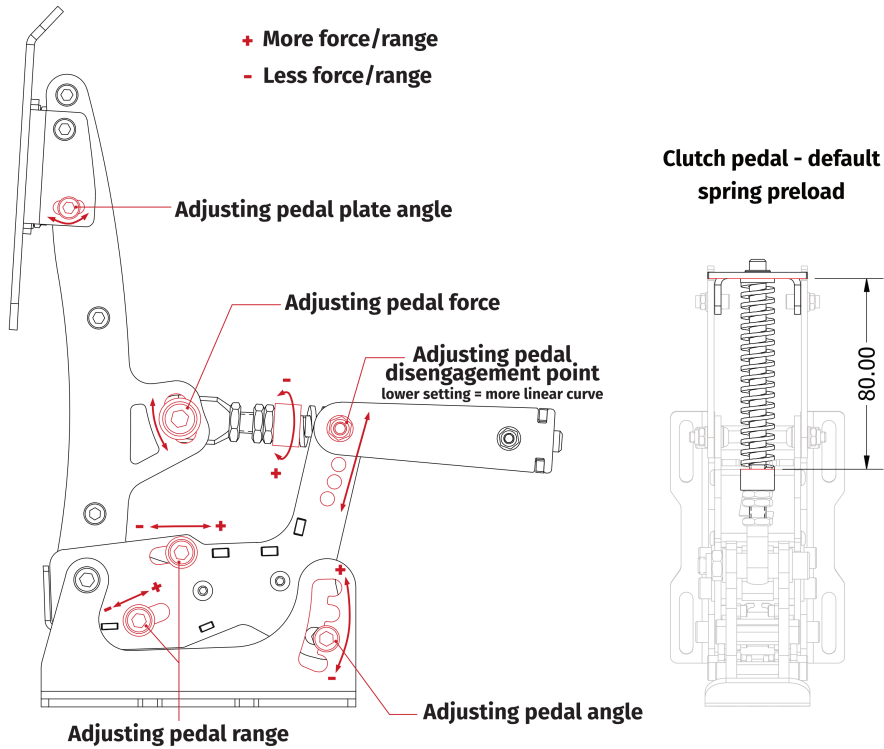
Adjusting acceleration pedal:



Adjusting brake pedal:



Adjusting clutch pedal:



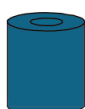
Adjusting brake pedal hardness

Brake pedal contains dumpers, which can be changed in order to archive different hardness level:

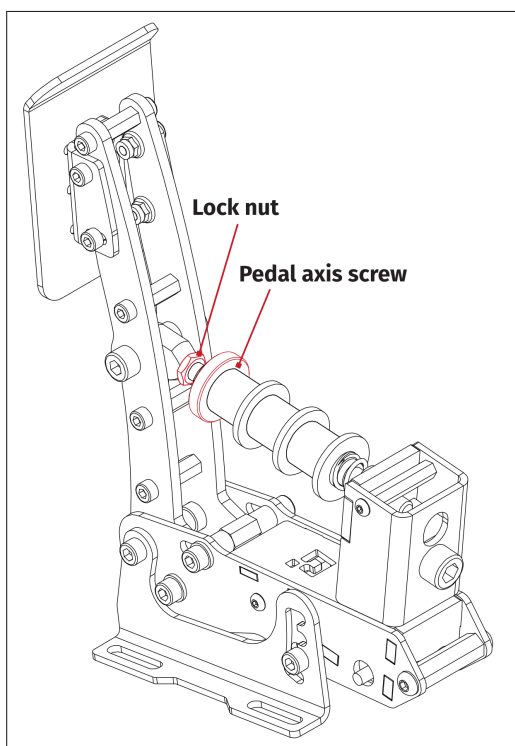
**BLACK
(SOFT)**



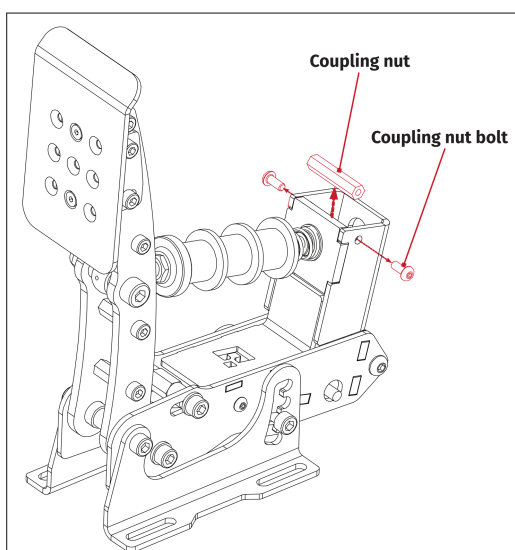
**BLUE
(MEDIUM)**



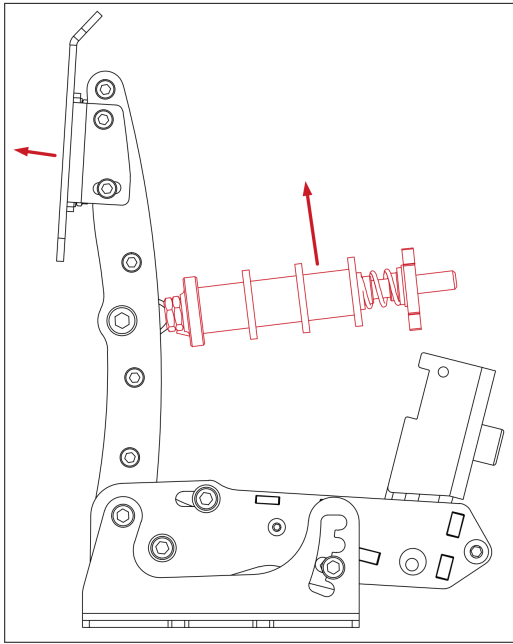
**ORANGE
(HARD)**



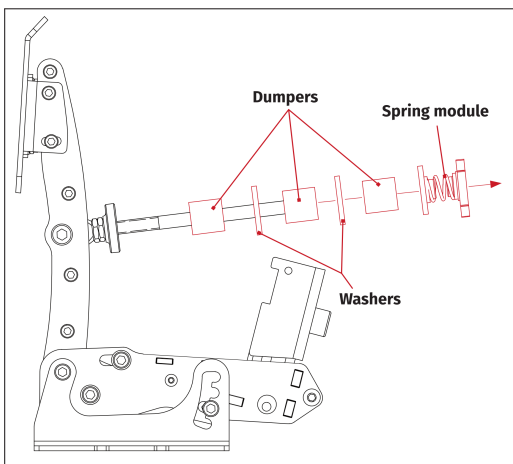
1. Reduce the tension of the pedal. Unscrew the lock nut using 13 mm flat wrench, then turn the pedal axis screw counter clockwise by hand to reduce the tension.



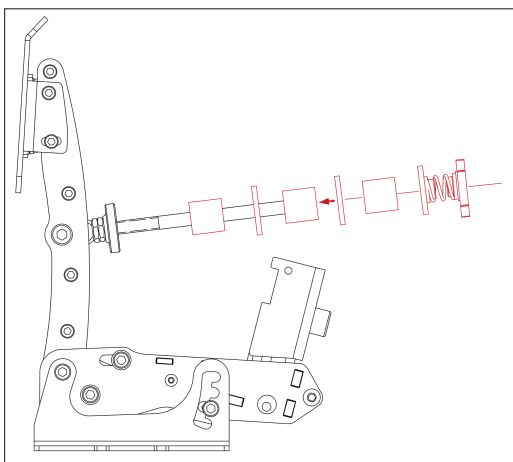
2. Remove the coupling nut by screwing out 2 coupling nut bolts using 2,5 mm hex key.



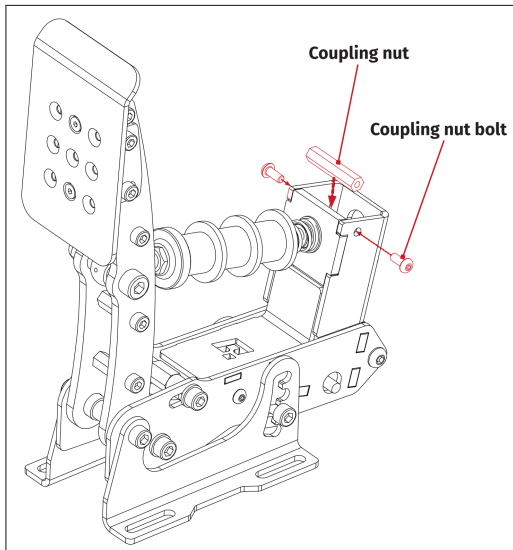
3. Pull out the pedal axis.



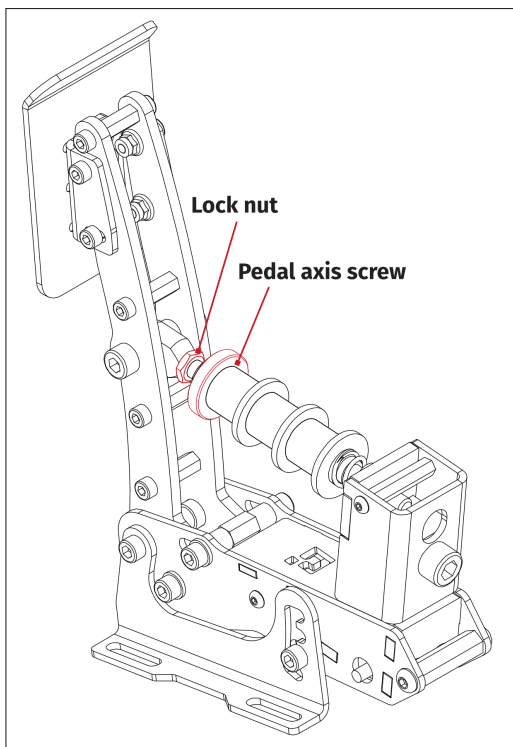
4. Pull out the spring module and dumpers from the pedal axis.



5. Put in the replacement dumpers with washers and spring module in reverse order.

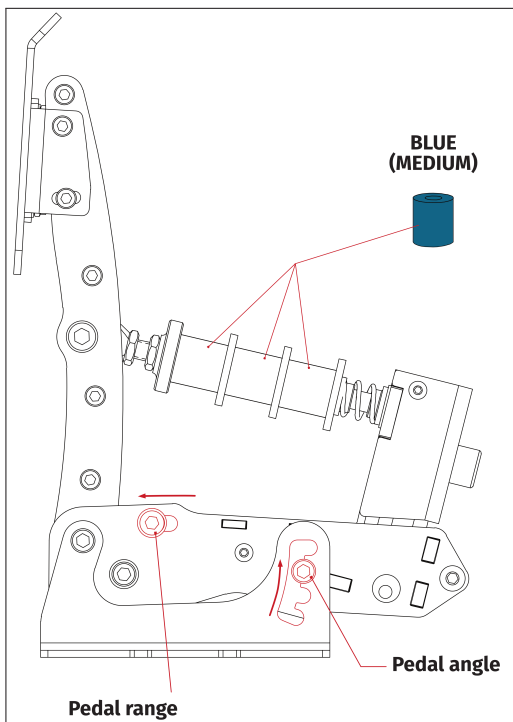


6. Screw in the coupling nut by screwing in 2x coupling nut bolts using 2,5 mm hex key.

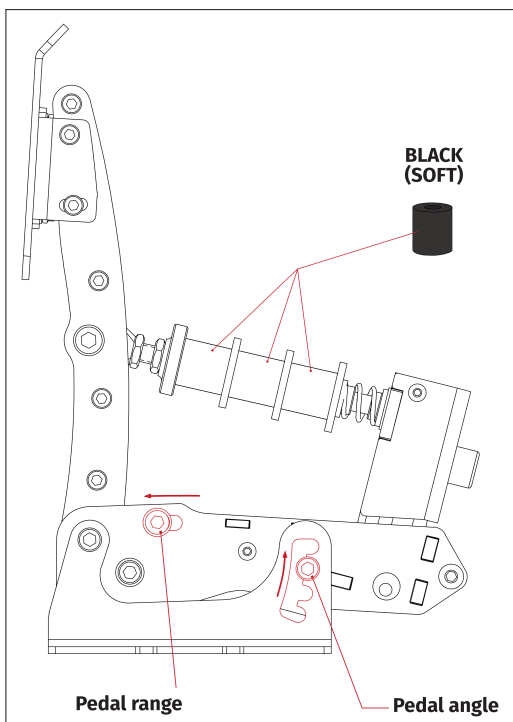


7. Increase the tension by turning the pedal axis clockwise. Lock the position by tightening the lock nut using 13 mm flat wrench.

Recommended brake pedal setting

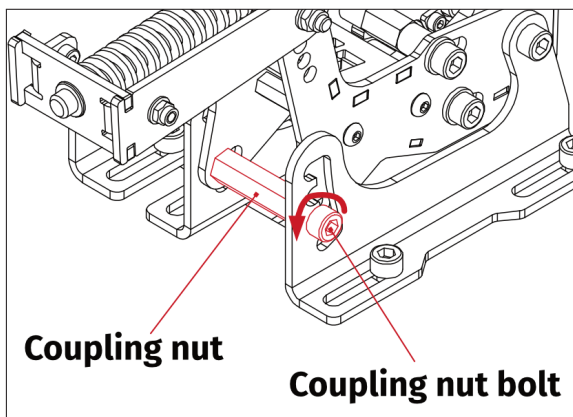
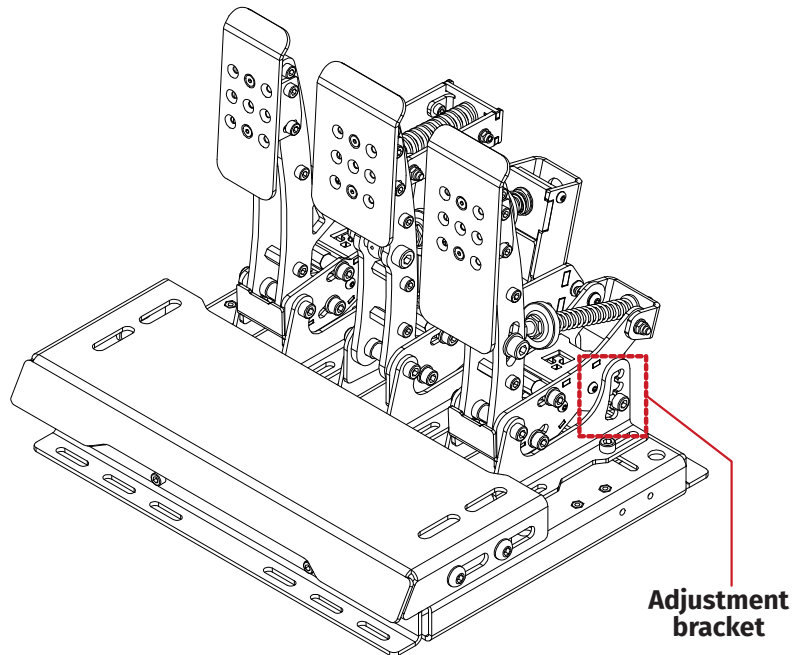


When using blue (medium) rubber dumpers it is recommended to adjust pedal range and pedal angle as shown on the illustration.

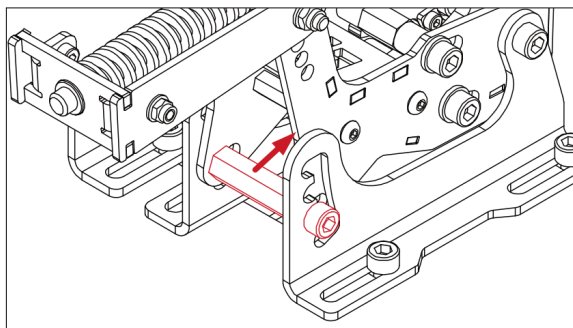


When using black (soft) rubber dumpers it is recommended to adjust pedal range and pedal angle as shown on the illustration.

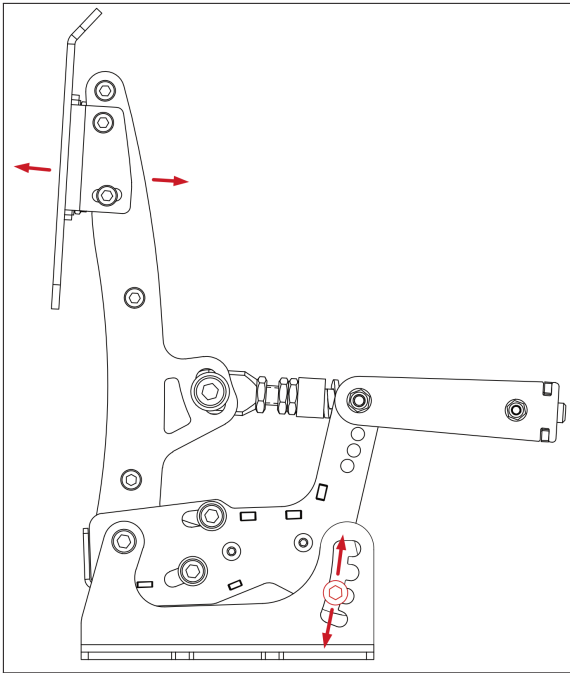
Adjusting pedals angle



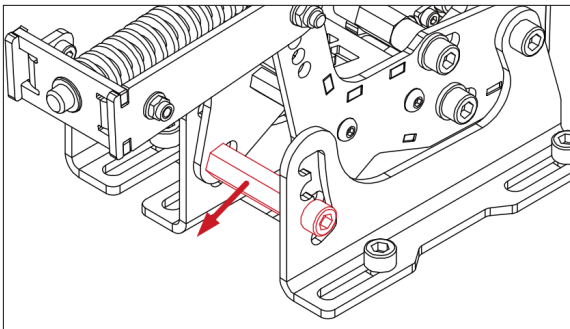
1. Unscrew two side bolts of the coupling nut using 5 mm hex key while holding the coupling nut using 10 mm flat wrench.



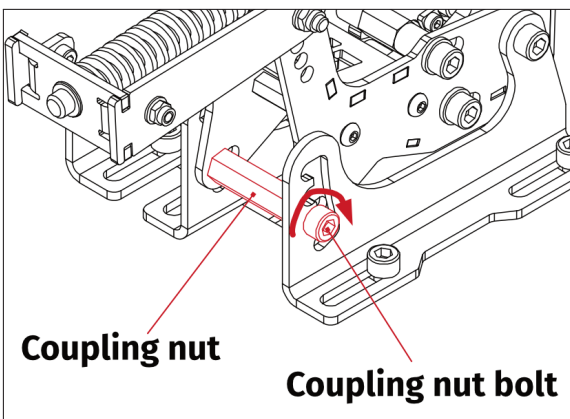
2. Push in the coupling nut.



3. Adjust the angle of the pedal by applying force by hand on the pedal plate.

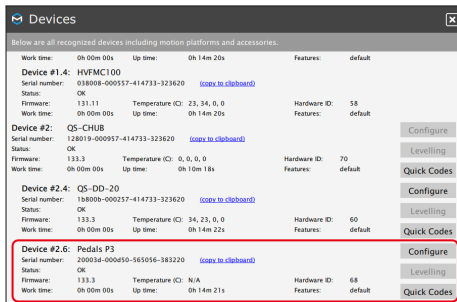


4. Pull in the coupling nut into new position.

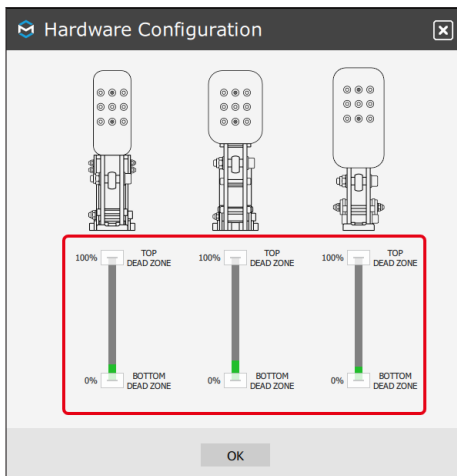


5. Screw in two coupling nut bolts using 5mm hex key to secure new position. Hold the coupling nut using 10 mm flat wrench.

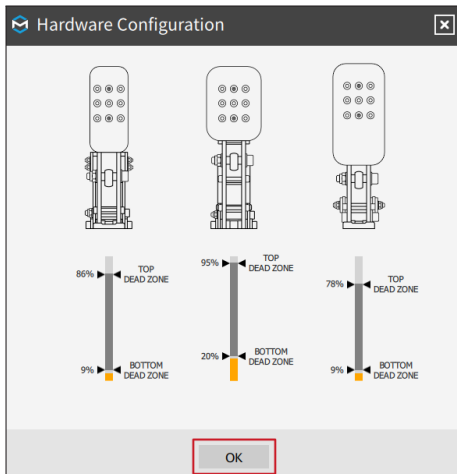
6.2.2 SOFTWARE ADJUSTMENT



1. To adjust pedals select the **Configure** button in **Devices** tab of **QubicManager**. Pedals will be recognized as **Pedals P3** in the devices list.



2. **Press the pedal** to see how much force is needed to archive dead zones. Set the bottom and top dead zone to your preferences by adjusting the sliders on each of the pedal.

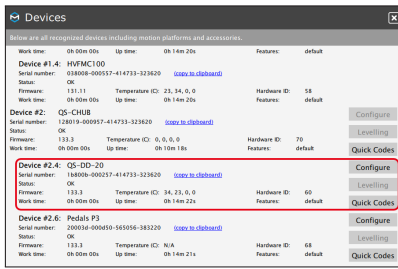


3. After selecting top and bottom dead zones to your liking select **OK** button, the configuration will be saved and used in the simulations.

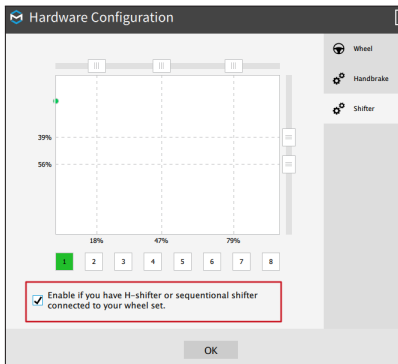
INFO

Pedals arrives with pre-adjusted factory settings.

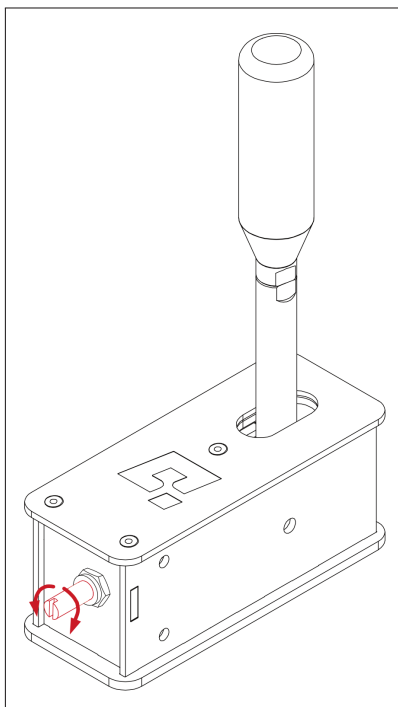
6.3. ADJUSTING SHIFTER



1. To adjust shifter select the **Configure** button in **Devices** tab of **QubicManager**. Shifter will be recognized as **QS-DD-20** in the devices list.



2. **Move the shifter** to see if the gears are changing up and down. Indicator will switch between 1 and 2 - it shows if you select upper or lower gear. **Enable** the shifter by selecting the check-mark field. Select **OK** button to save changes.



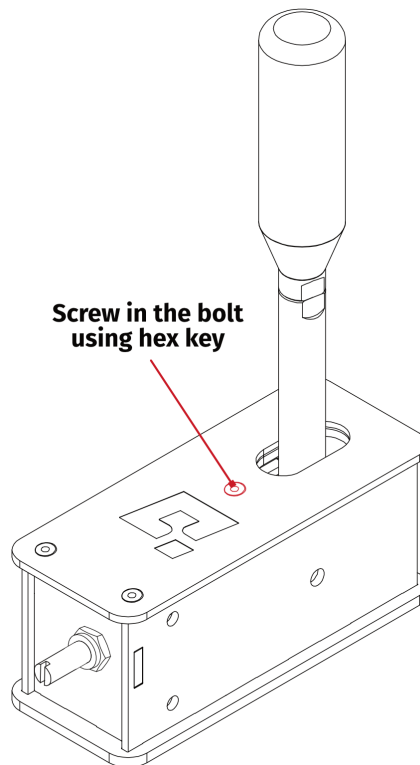
3. **To adjust the tension** unscrew the nut using 13 mm flat wrench on the front side of the shifter housing. Adjust the tension by screwing in or out the bolt using flat screwdriver. By **screwing clockwise** you will **increase** the force needed to change the gear, by **screwing counter clockwise** you will **reduce** the force needed to change gear. Adjust the force to your preferences, then lock the position by screwing in the lock nut.

INFO

Shifter arrives with pre-adjusted factory settings.

6.4. CONVERTING SHIFTER INTO HANDBRAKE

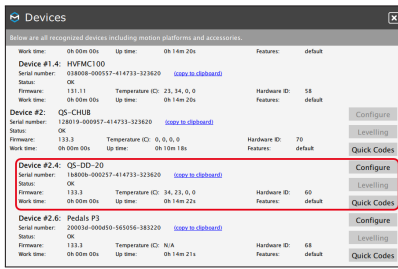
The shifter unique design allows to convert it into handbrake by just one simple step. To convert shifter into handbrake you need to screw in the converting bolt into the hole located in the upper part of the shifter housing using hex key. Screwing in the bolt results slight tilt of the lever and blocking movement to upward position. Removing the bolt will convert handbrake into shifter.



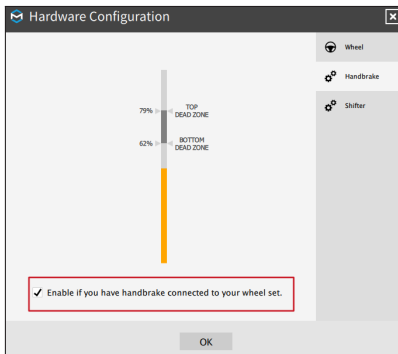
INFO

Enable the **handbrake** in the configuration tab to activate handbrake during simulation.

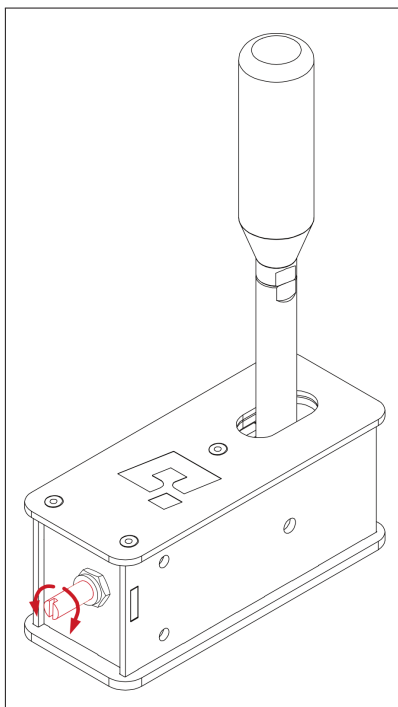
6.5. ADJUSTING HANDBRAKE



1. To adjust shifter select the **Configure** button in **Devices** tab of **QubicManager**. Shifter will be recognized as **QS-DD-20** in the devices list.



2. **Move the handbrake** to see how much force is needed to archive dead zones. Set the bottom and top dead zone to your preferences by adjusting the slider. Select **check-mark** field to activate the handbrake. Select **OK** button to save changes.



3. **To adjust the tension** unscrew the nut using 13 mm flat wrench on the front side of the shifter housing. Adjust the tension by screwing in or out the bolt using flat screwdriver. By **screwing clockwise** you will **increase** the force needed to change the gear, by **screwing counter clockwise** you will **reduce** the force needed to change gear. Adjust the force to your preferences, then lock the position by screwing in the lock nut.

INFO

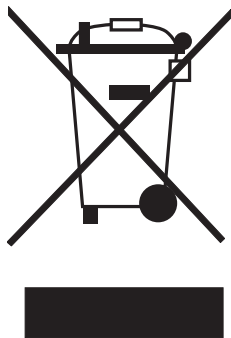
Handbrake arrives with pre-adjusted factory settings.

7. CONFORMITY INFORMATION



The QS-DD-20 meets the requirements of CE and relevant regulations of the EMC Directive 2014/30/EU and the RoHS Directive 2011/65/EU.

8. ENVIRONMENTAL IMPACT AND DISPOSAL



DO NOT dispose of this product with standard household waste, it shall be disposed at a collection point for waste electrical and electronic equipment for recycling.

QS-DD-20 is an advanced device and if stored or disposed of incorrectly, it could harm the environment or/and other people. Please contact your local authorities for information at the collection point nearest you.

9. WARRANTY

Qubic System warrants to the consumer that this product shall be free from defects in materials and workmanship, for a warranty period which corresponds to the time limit to bring an action for concerning this product. QS-DD-20 comes with two (2) years limited warranty from the original date of purchase.

For commercial customers, there is a one (1) year limited warranty, starting on the original date of purchase.

Within the warranty period, the product will be repaired or replaced free of charge, excluding shipping charges.

This warranty shall not apply:

- If the product has been modified, opened, altered, or has suffered damage as a result of inappropriate or abusive use, negligence, an accident, normal wear, or any other cause unrelated to a material or manufacturing defect (including, but not limited to, combining the QS-DD-20 with any unsuitable element, including in particular power supplies, chargers, or any other elements not supplied or approved by Motion Systems for this product).
- In the event of failure to comply with the instructions provided by technical support.
- To software, said software being subject to a specific warranty.
- To accessories (cables, cases, for example).
- If the product was sold at public auction or if the product has suffered damage as a result of force majeure: flood, fire, earthquake, storm.

This warranty is non-transferable. No new warranty period commences if the product is repaired or replaced. Your statutory rights towards the seller are not affected or restricted by this warranty. Motion Systems, and their partners are not liable for any indirect, incidental, or punitive damages from use of this product.

In case of malfunction during the warranty period immediately contact technical support.

10. TROUBLESHOOTING

WARNING

DO NOT attempt to do any repairs by yourself. It is dangerous and voids the warranty! Repairs should be consulted with technical support and then performed by a qualified technician.

If the device is not working properly, before contacting technical support, try this:

- Check Action Center in QubicManager.
- Check power supply cable and USB connection between QS-DD-20 and user PC.
- Check Motion Lock Switch position and its connection cable. Unpress if needed.
- Try different USB ports.
- If a problem occurred abruptly, it could be caused by thermal protection. Turn off QS-DD-20, disconnect it from power source and wait at least 15 minutes to let it cool down.
- In case of every unclear electrical or strange behaviour, contact support.
- If abnormal work conditions are observed such as:
 - Strange noise, squeaking, buzzing
 - Strange smell of burn or other

DO NOT use the device and contact with the distributor/reseller for technical support.

11. COPYRIGHT

Qubic System is a trademark of Motion Systems. All rights reserved.

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12. MANUFACTURER INFORMATION

Motion Systems

Miedziana 7 Street
55-003 Nadolice Wielkie
Poland



INFO

In support queries please contact your reseller.



QUBICSYSTEM