

# SQ10 Interactive Target User Manual



V.2019-06

#### Contents



Foreword

**Installation and Start-Up** 

**Features and Operation** 

**Technical Characteristics** 

Updates

Maintenance

**Precautions** 

**Guarantee and After-Sales Service** 

**Contact Details** 



sportquantum



# Foreword





**SQ10** is an interactive target developed for **sport shooting** and **compressed air weapons used at a distance of 10 metres** and with a maximum power of **7.5 joules** as authorised in Olympic events (maximum permitted power for competition pistols and rifles).

Behind the transparent polycarbonate impact plate there is a screen that displays the graphics generated by the Control Tablet and the FeedbaQ Application. The scores are displayed in real time to an accuracy of a tenth of a point on the Control Tablet by the shooter. In the basic configuration, the SQ10 interactive target and the Control Tablet with the FeedbaQ Application are paired with one another and communicate using wireless technology (WiFi mode).

#### The Technology

The research teams at Sport Quantum and CEA List have developed a new technology that makes it possible to identify the location of an impact by measuring the shock waves generated by the projectile. Numerous innovations that have resulted in five international technology-related patents have made it possible to achieve the level of performance required for Olympic Precision Shooting events (precision better than 1/10<sup>th</sup> of a point or 125 micrometres).

#### **Continuous Improvement**

Sport Quantum believes that you must be able to measure your current performance if you want to improve. Whether you are practising at amateur or competition level, the FeedbaQ application allows all sports persons to analyse every aspect of their performance, track it over time and benefit from training methods to help them improve.

#### **Fun and Sharing**

Young or old, hobby participants or competitors, Sport Shooting is a leisure activity for all. The technology developed by Sport Quantum offers a new way of training that remains faithful to the spirit of precision Sport Shooting. Sports persons benefit from libraries of training cards and game cards that test both their precision and speed. They can also compare themselves with one another by training with the same digital card as other sports persons and share their enthusiasm over social media.

#### **Measuring Performance**

SQ10 allows you to measure all the performance parameters involved in the sport in real time: Number of points, Grouping, Barycentre, Training time, etc...



# **Installation and Start-up**





The SQ10 Interactive Target is supplied ready for use with a Control Tablet and the FeedbaQ Application. These communicate using wireless technology and are already paired with one another on delivery.

If, for any reason, they do not communicate with one another (Tablet and Target), reconnect them by choosing "Settings", "WiFi" (the default WiFi password is "*sportquantum*").

#### Unpacking the Target and Control for the different Items

Make sure that none of the items has been damaged. You will find the following items:

- 1 SQ10 Interactive Target
- 1 Cover for the target
- 1 Control Tablet
- 1 Cable and power transformer
- 1 Fixing bracket
- 2 Screws and rawl plugs (for concrete walls)
- 2 Fixing pins

#### Installation Conditions and Recommendations

Fix the target to a solid, flat wall or use an upright with a base big enough to guarantee the stability of the assembly (the target weighs 12 kg).

#### Fixing the SQ10 Target

See the diagram on page 9.



#### Switching on the SQ10 Target

Plug the SQ10 target to the mains using the supplied power transformer. Make sure that the power supply cables are concealed! When power is supplied to the SQ10 Target, it starts up automatically and waits to be connected to the Control Tablet and the FeedbaQ Application. To do this, you must also start up the tablet.

#### SQ10 Target Standby Mode

The target automatically switches to standby after two hours without being used. To start it again, shoot once at the target (recommended method) or unplug it and then plug it in again.

#### Starting the FeedbaQ Application

To start the FeedbaQ Application, first make sure that your Control Tablet is charged. Select the "FeedbaQ" Application on your Control Tablet and make sure that it is connected to the SO10 Target, F

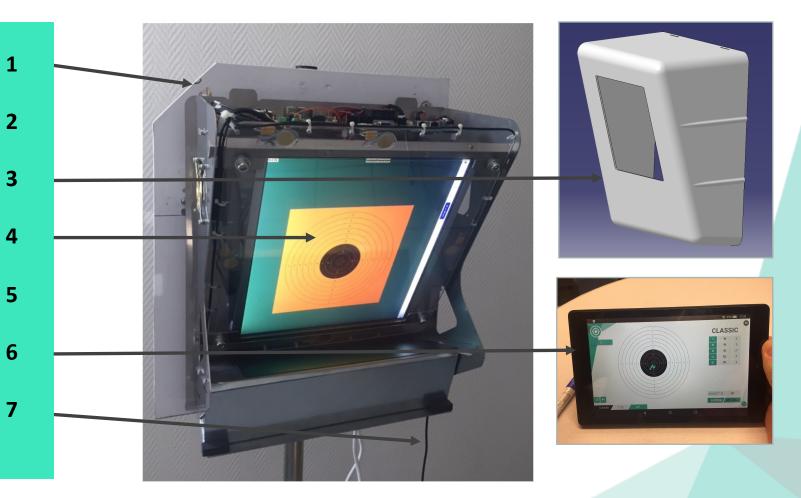
Select the "FeedbaQ" Application on your Control Tablet and make sure that it is connected to the SQ10 Target. For information on how to do this, see the section "Features and Operation" below.

# SQ10 - Start-Up



#### SQ10 Interactive Target includes 🖚

- **1 One Fixing Bracket**
- 2 Two fixinf Pins
- 3 One Cover for the Target
- 4 One Interactive Target SQ10
- 5 Two Screws and Rawl Plugs
- 6 One Control Tablet
- 7 One Cable and Power Transformer



# SQ10 - Start-Up

#### Installation and Start-up

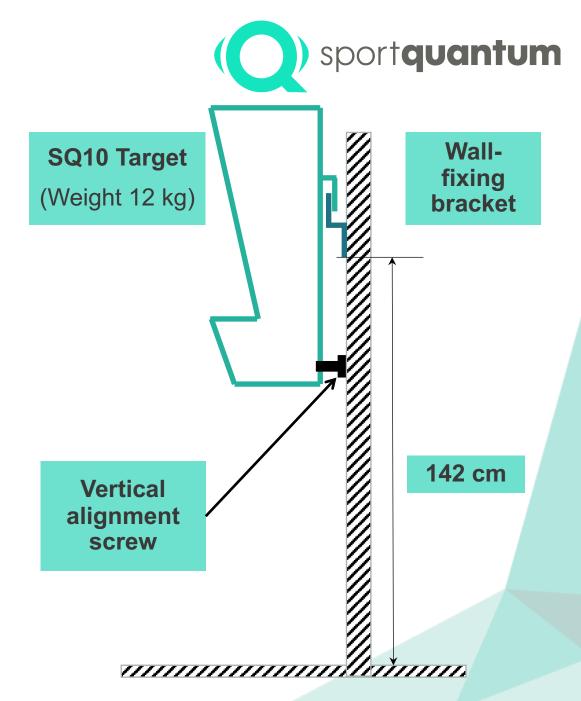


- 1 Fix the bracket (1) on the wall with the screws (5)
- 2 Place the target (4) on the fixing bracket (1) using the two « handles » on each side of the target
- 3 Protect the target with the Cover (3)
- 4 Plug the cable and the power transformer (7) on the back (top left) of the target (4)
- 5 The Target is ready for use It starts as soon as it is plugged
- 6 Start the Control Tablet (6), which connects automatically to the Target

#### Precautions for use



- 1 Apply silicone oil to the Top-Plate before starting to use the Target
- 2 Repeat this action very regularly at the beginning, so that a protection layer appears
- 3 Never shoot on the Target without the cover
- 4 Follow the procedure to shut down the target (see page 37) and do not unplug it when running !



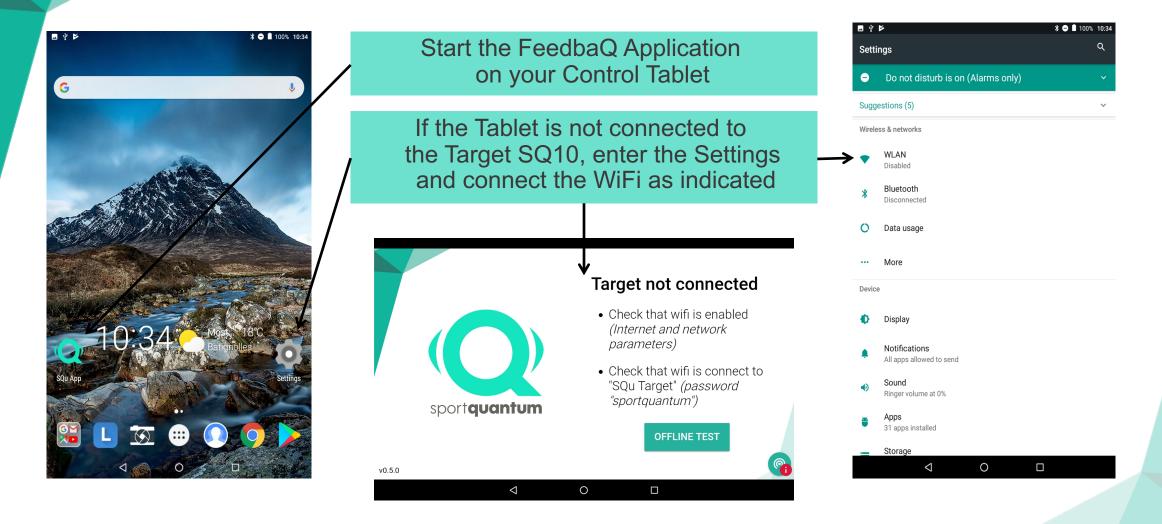


# **Features and Operation**



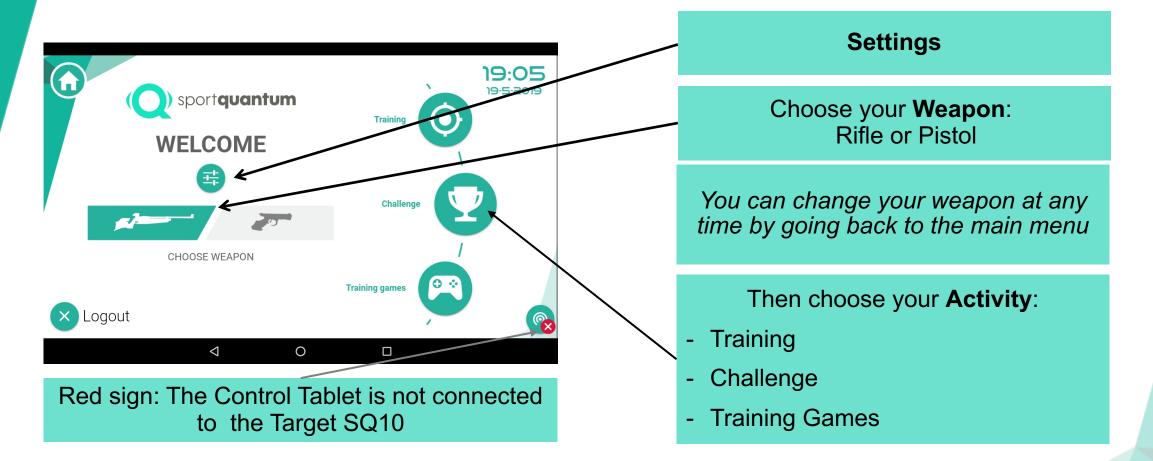
## Start-up





### Choosing Weapons Choosing Activities

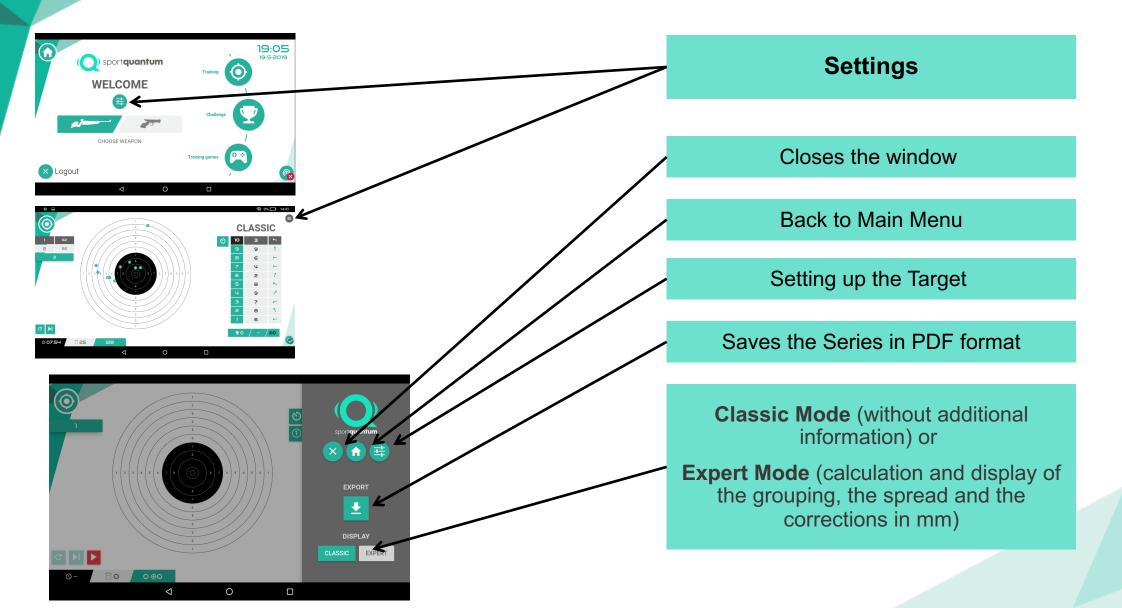




To explain the exercises in the User Manuel, we took Pistol Targets. The exercises are obviously identical for Rifles (except Standard Shooting)

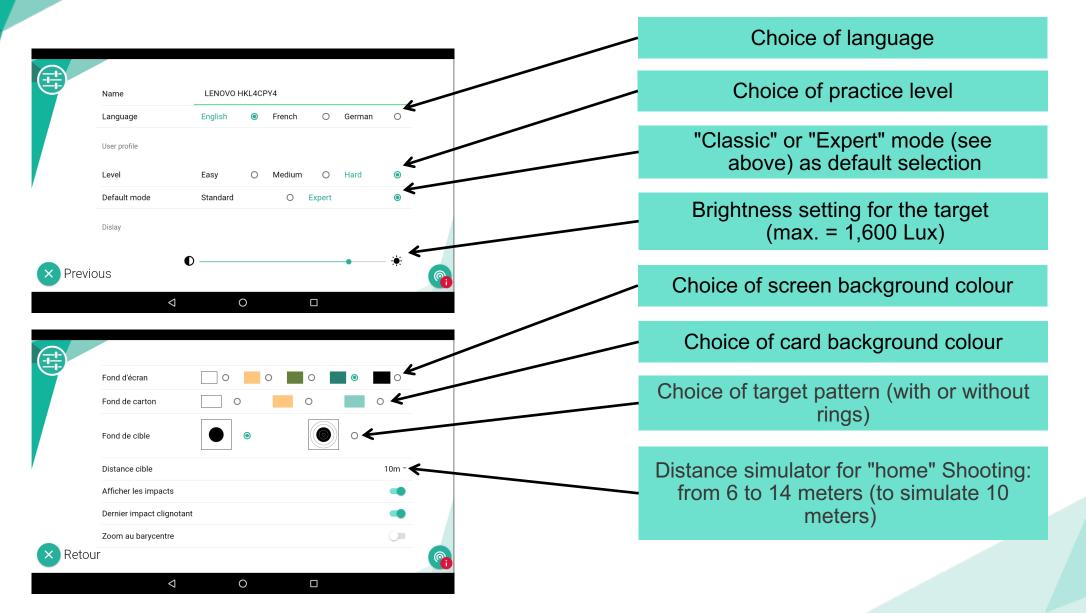
### Setting up the Target





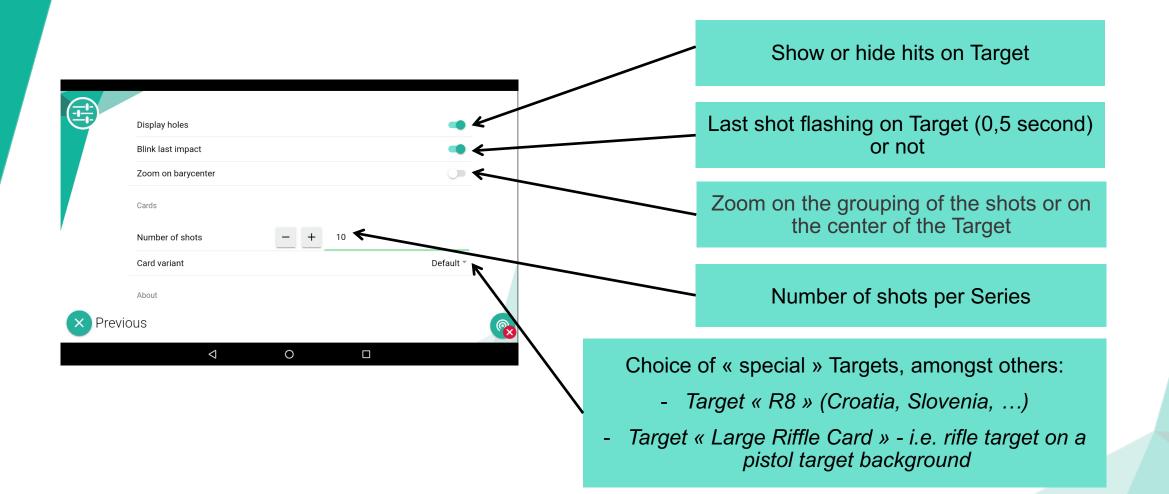
### **Setting up the Target**





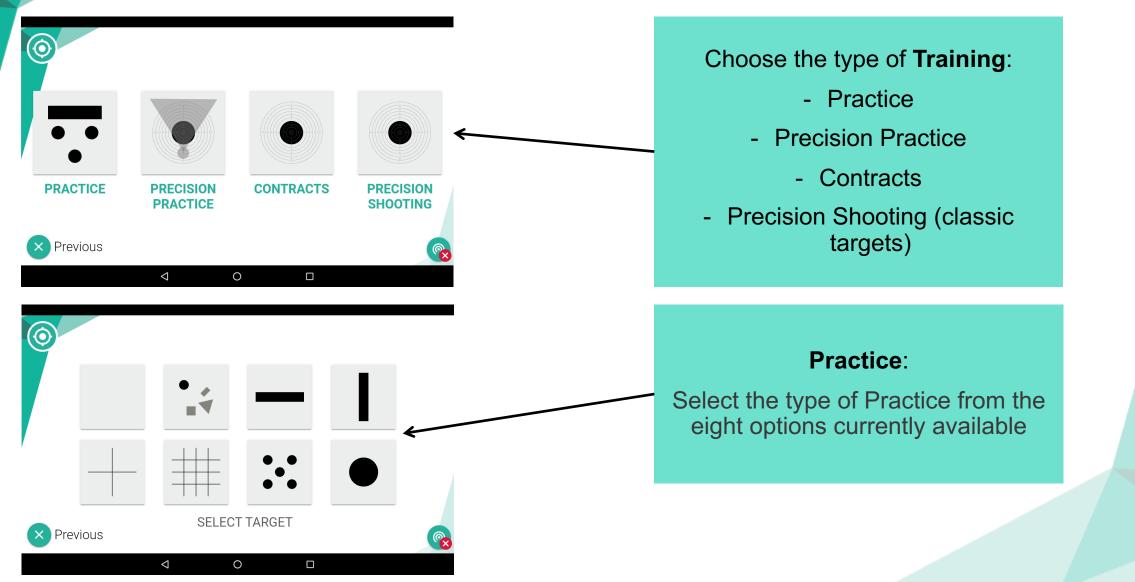
### **Setting up the Target**





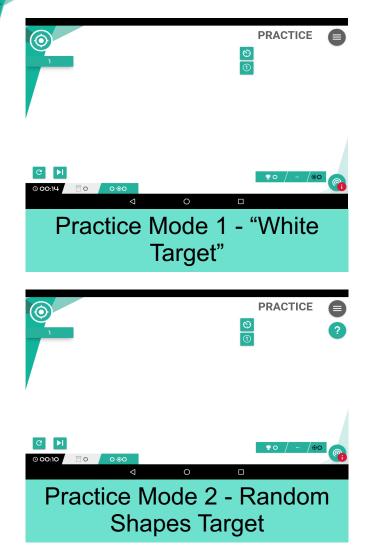
### Training -Practice

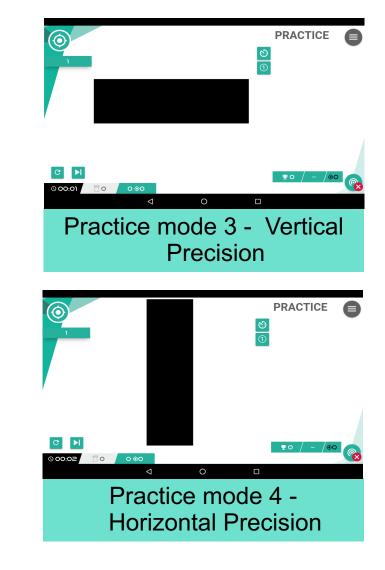




## Training -Practice (Mode 1 to 4)

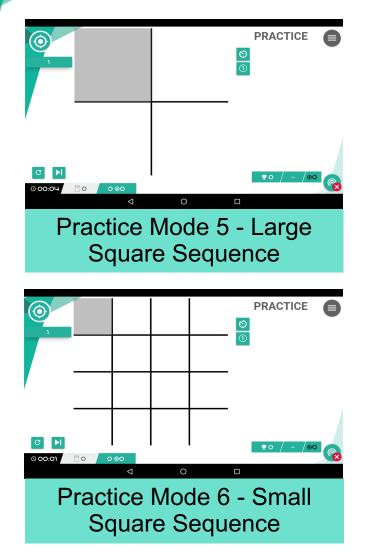


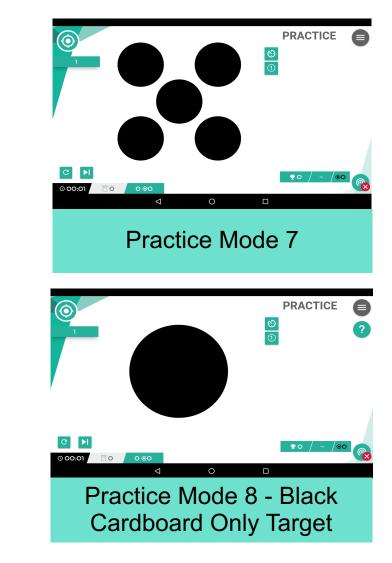




## Training -Practice (Mode 5 to 8)

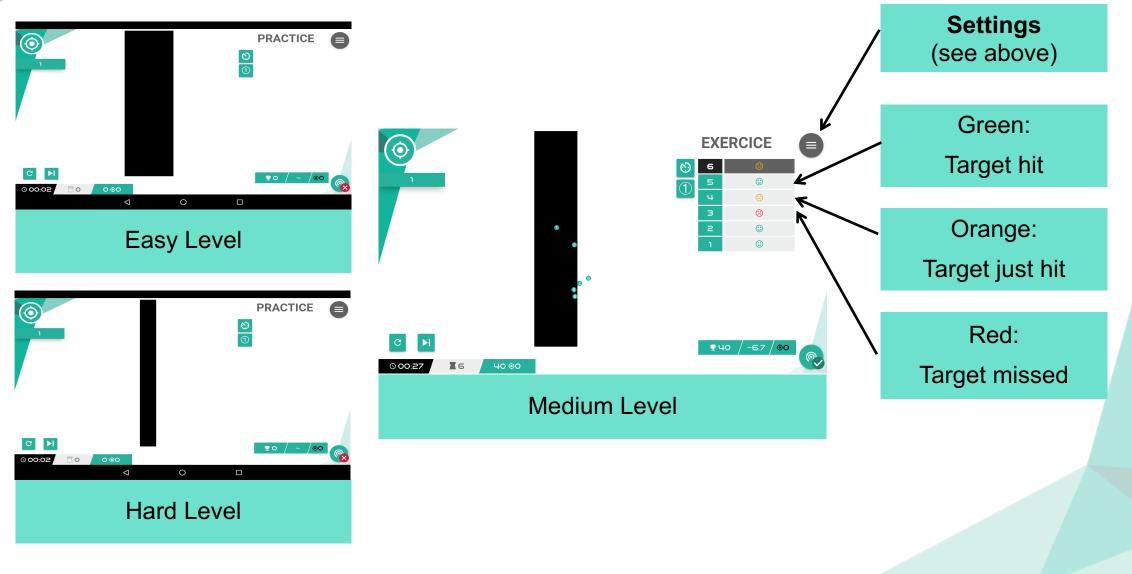






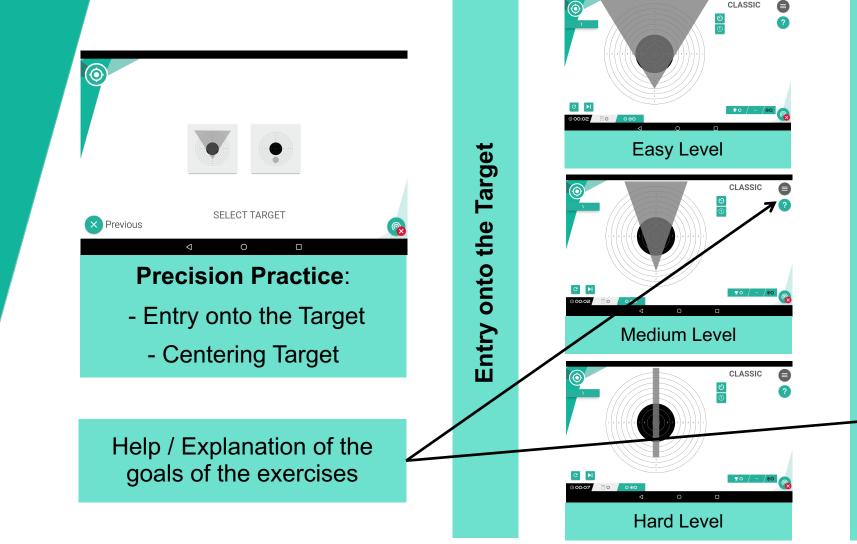
### Training -Practice (Example)

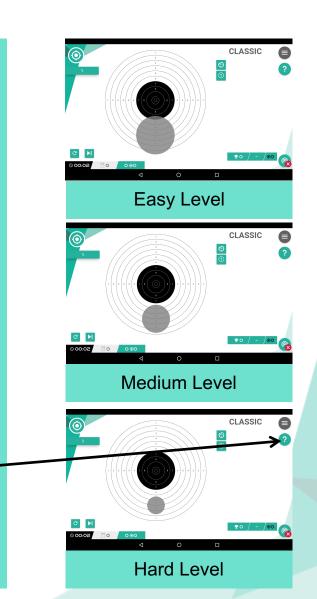




### Training -Precision Practice



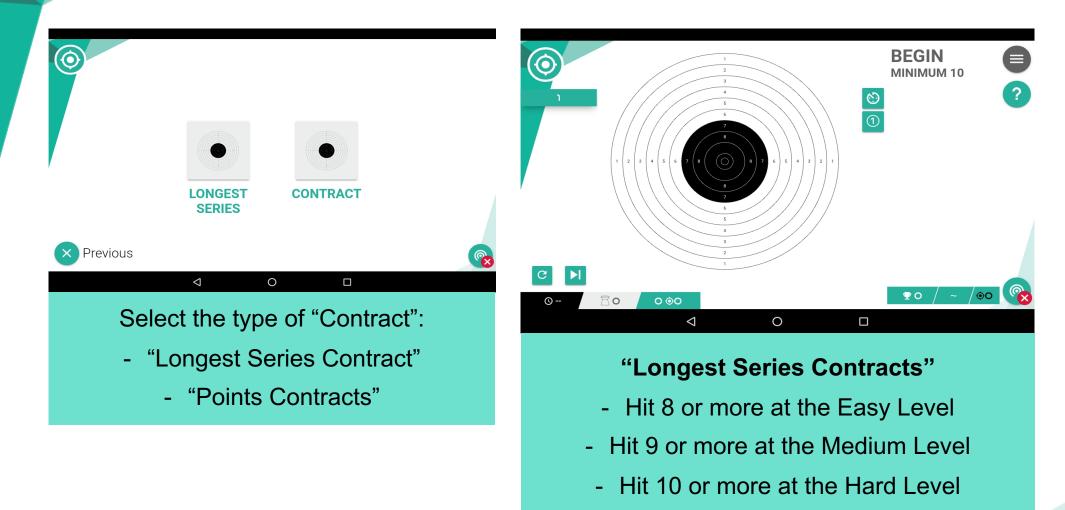




**Centering Target** 

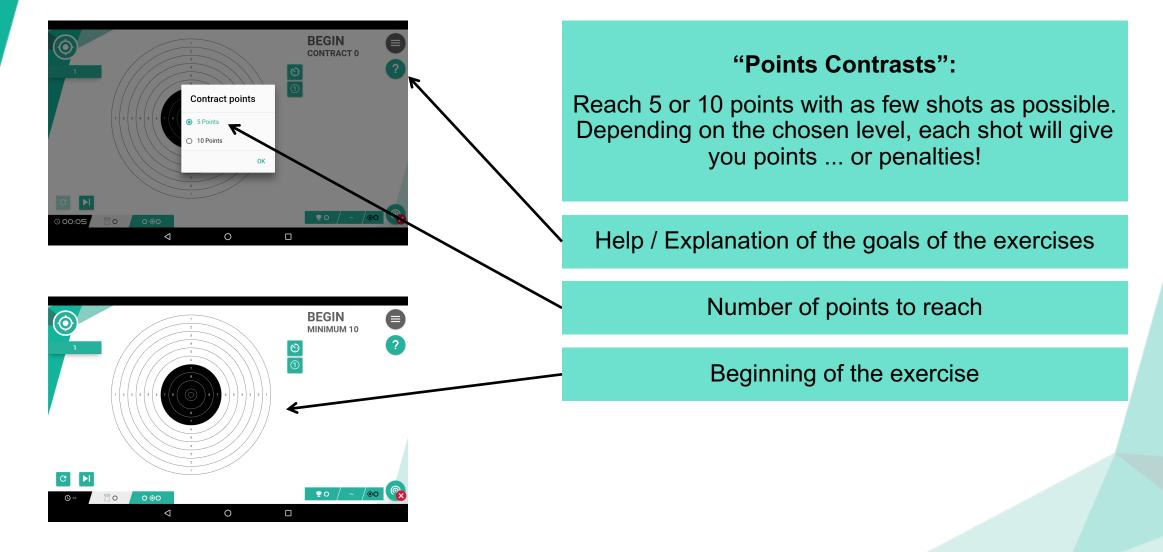
### Training -Contracts





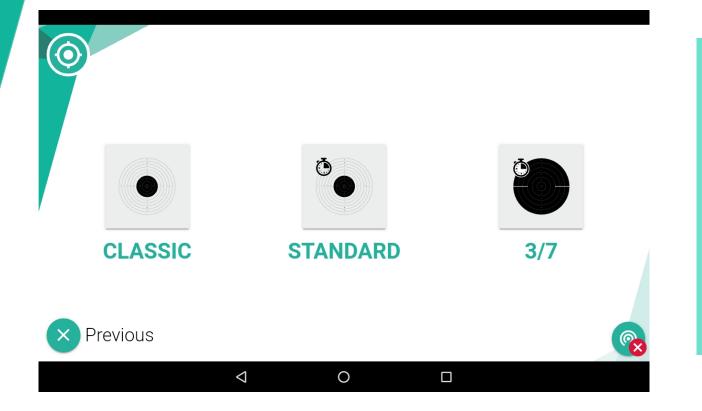
#### Training -Contrats





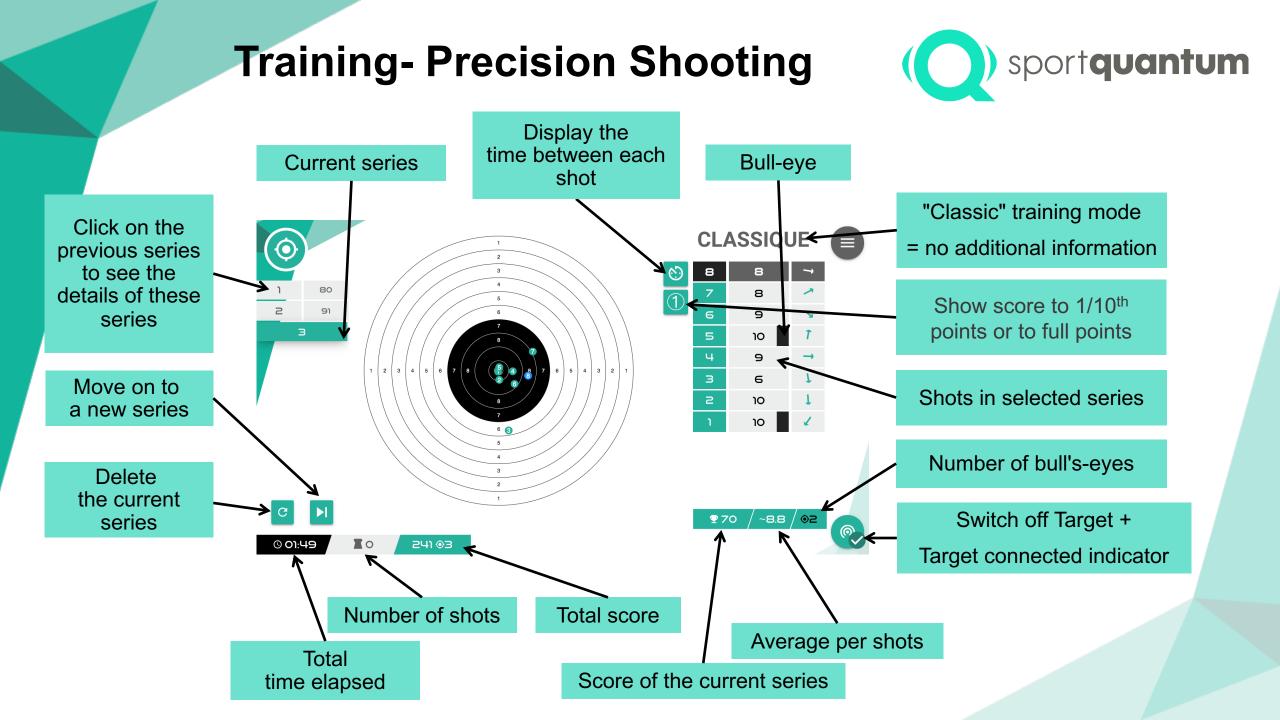


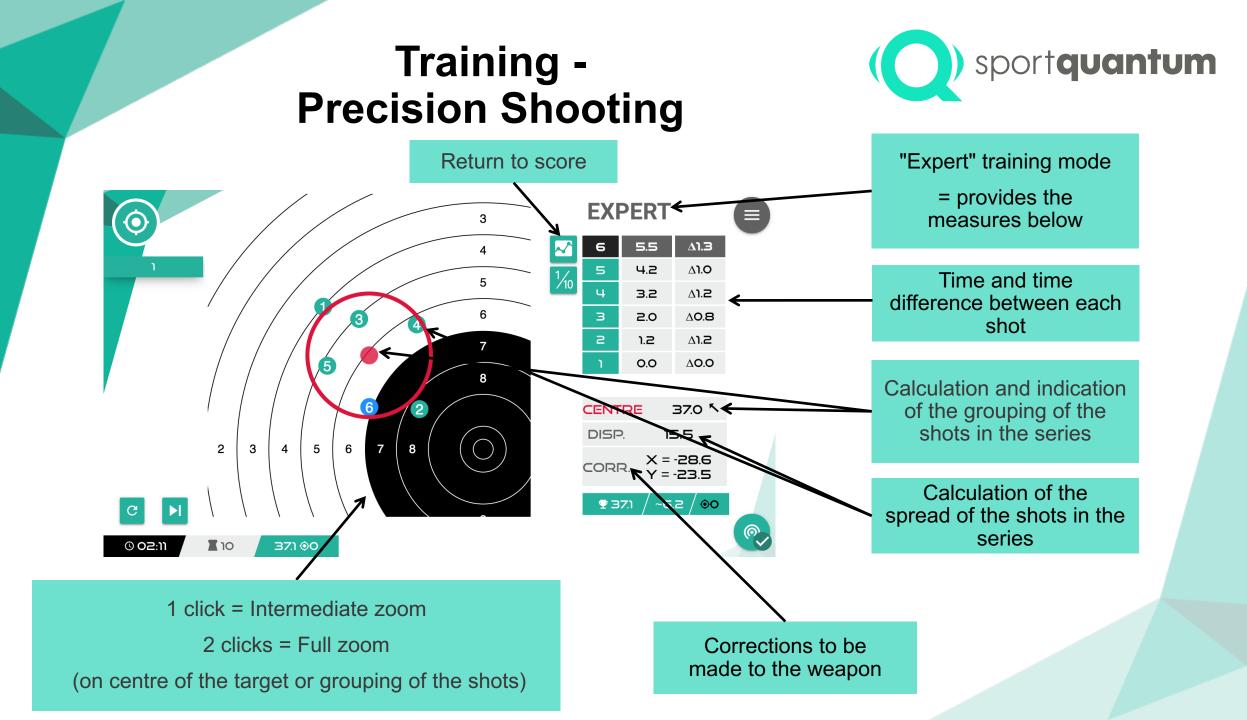
# Training -Precision Shooting



#### Precision Shooting: choose between

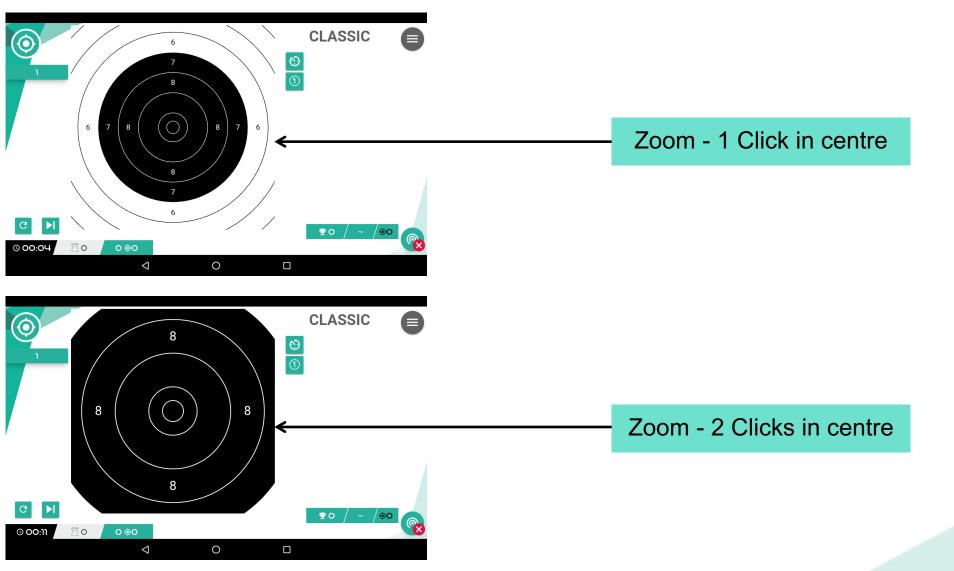
- Precision Shooting (classic)
- Standard Shooting (5 shots in 10 seconds Only pistols)
  - « 3 / 7 » (7 seconds pause / 3 seconds per shot - only pistols)





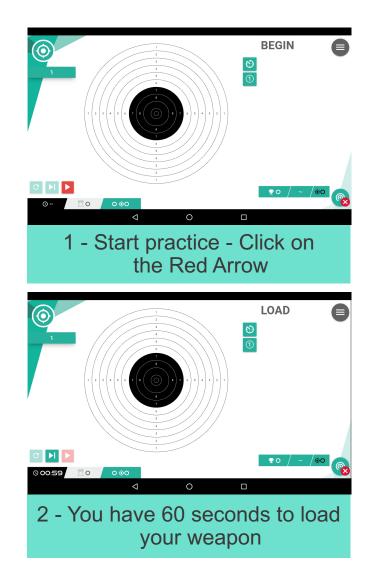
## Training -Precision Shooting

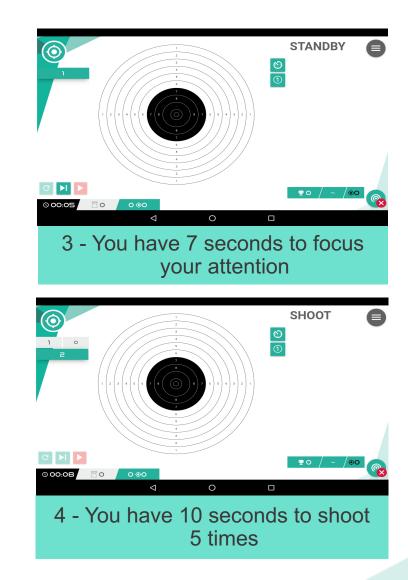




### Training -Standard Shooting

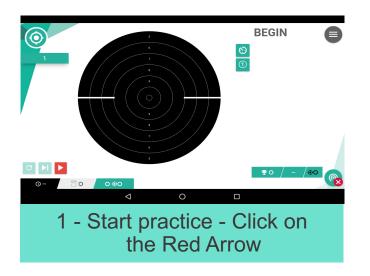


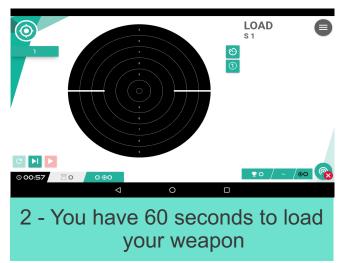




#### Training -« 3 / 7 »





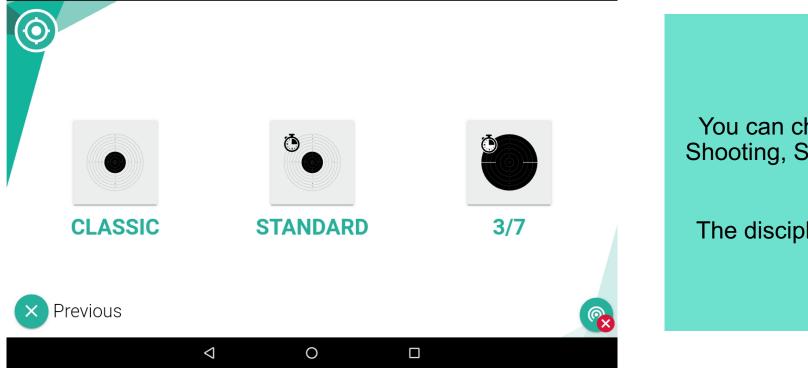












#### **Pistols :**

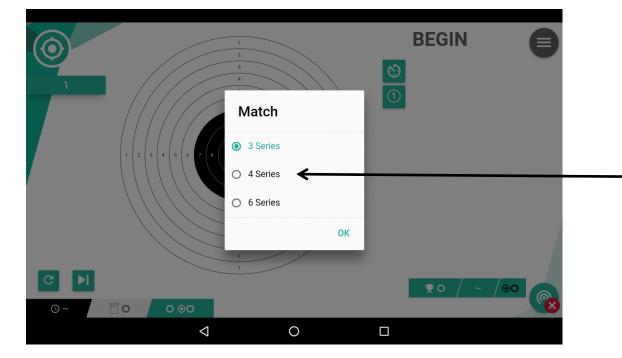
You can choose between Precision Shooting, Standard Shooting & "3 / 7"

Rifles :

The discipline available is Precision Shooting

### Challenge Precision Shooting





In the Challenge Mode, the different stages and the times set out in the competition rules are preprogrammed.

You can currently choose between three types of Challenge:

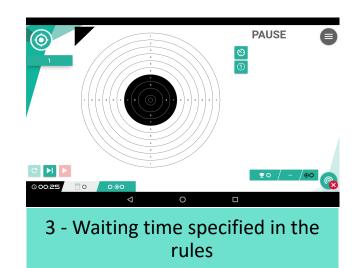
• 3 Series

- 4 Series
- 6 Series

## Challenge -**Precision Shooting**





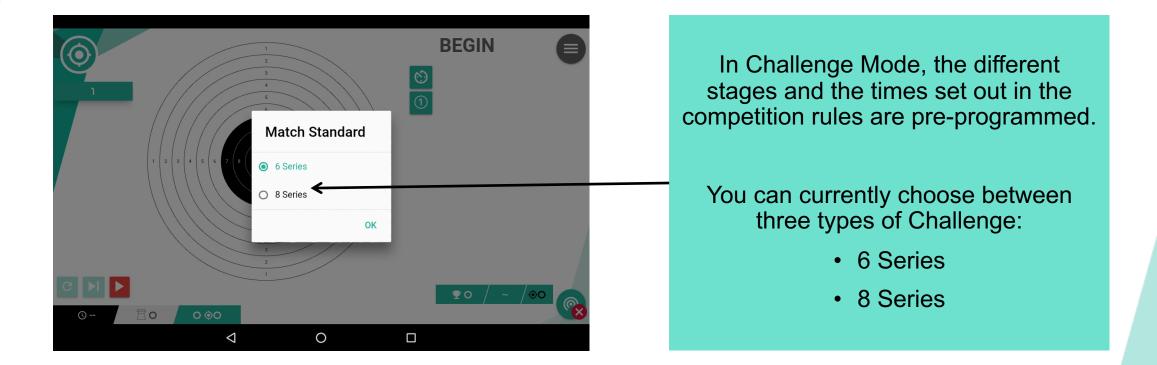




Click on to move from one stage the next without to having to wait for the time required by the rules

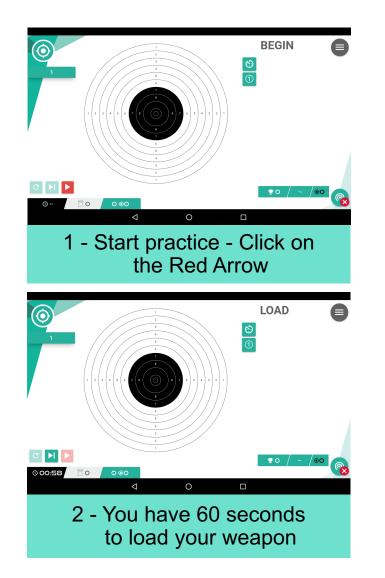
### Challenge -Standard Shooting

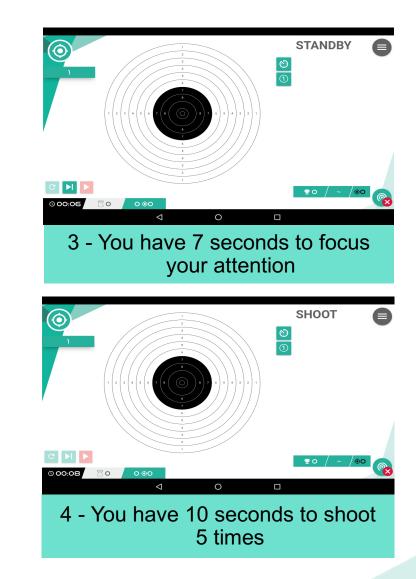




### Challenge -Standard Shooting

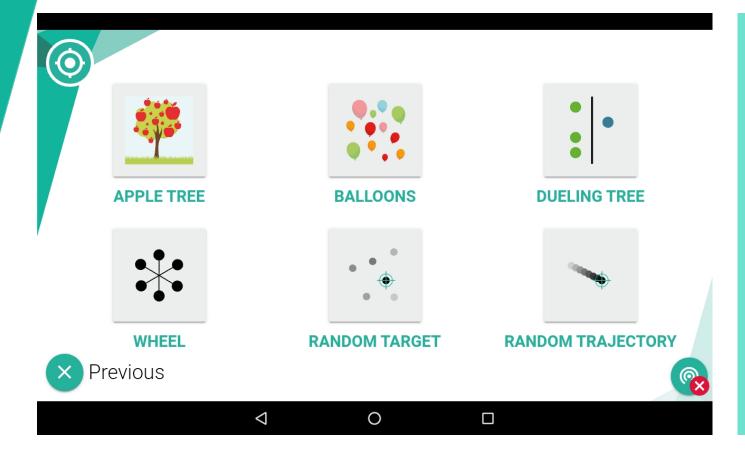






## **Training Games**





#### **Choice of Training Games :**

- Games
  - Apple Tree Game
  - Balloons Game
  - Wheel Game
- Games for 2 Shooters
  - Dueling Tree
- Random Targets (Fix Targets - variable level)
- Random Trajectory
   (Moving Targets variable level)

### **Training Games -Apple Tree Game**



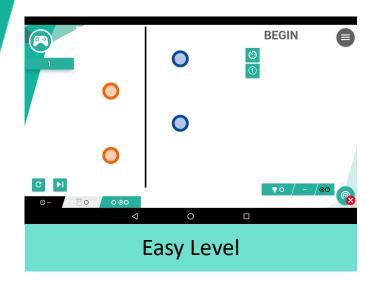
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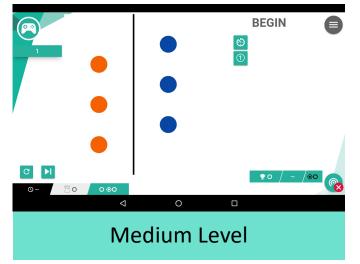
#### **Apple Tree Game**

The number indicated in the apple corresponds to the number of points scored (as a function of difficulty)

# Training Games -Dueling Tree



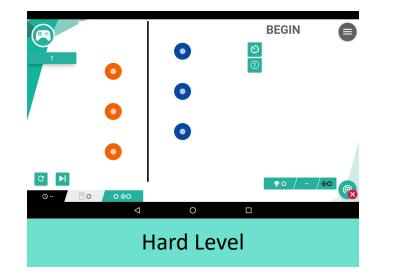




2 Shooters will compete shooting at the same time on the Target (each his color).

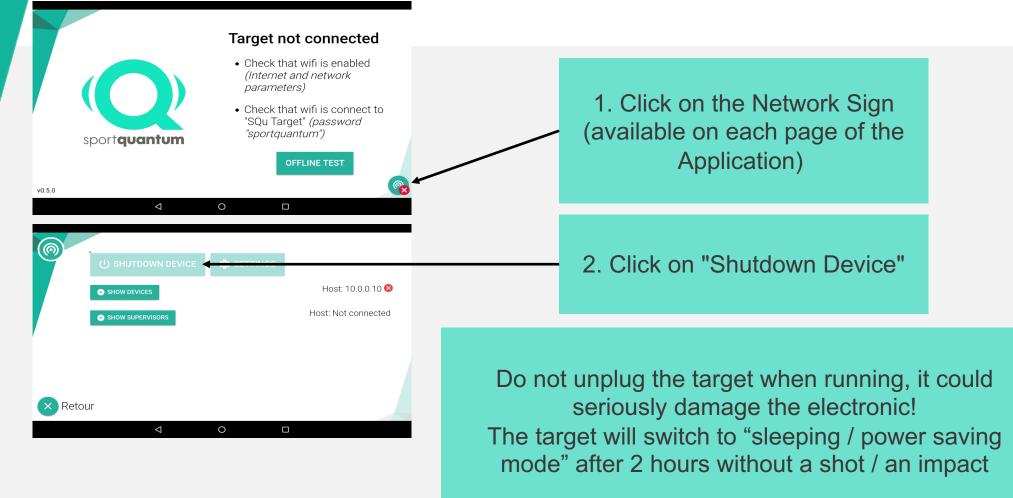
When a Shooter hits a target of his color, that target goes to his "opponent".

The first of the two shooters who have no more targets has won.



## Shut Down the Target SQ10





To restart the target, just shoot on it once



## **Technical Characteristics**





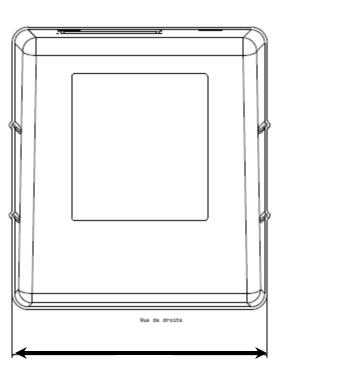
### Description

### **Technical Characteristics**

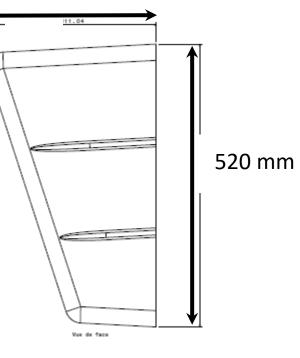
Dimensions	520 mm x 470 mm x 312 mm			
Weight	12 kg			
Maximum power	Recommended 7.5 joules (premature wear as of 8 joules)			
Mains power supply	100 and 240 V AC 50/60 Hz			
Electrical power supply to target	12 V DC			
Temperature &	Temperature between 10 and 35 degrees Celsius			
Humidity	Humidity < 80 %			
Power consumption	50 W			
Maximum brightness	1,500 Cd/m²			

## Outside Dimensions of Target









470 mm



# Updates





### Updating the FeedbaQ Software on the Control Tablet and the SQ10 Target Firmware

The SQ10 Interactive Target is supplied with a Control Tablet and the FeedbaQ Application. It may be necessary to download occasional updates or new versions of the application to fix any bugs, improve the user-friendliness of the interface and to adapt to any changes to the general conditions defined by the International Shooting Sport Federation (ISSF).

Customers and users will find all the information necessary to perform these updates themselves on the Sport Quantum website.

There are 2 types of updates:

- Simple updates only the Application FeedbaQ on the Control Tablet
  - This update is done by downloading the new version of the Application FeebaQ (that you either received by eMail or that you downloaded from the website <a href="https://www.SportQuantum.com">www.SportQuantum.com</a>) and by saving this new Application on the Control Tablet.
- Major updates both the Application FeedbaQ on the Control Tablet and the Firmware of the target SQ10
   It is important to first update the Firmware of the target SQ10 and only then to install the new Application FeedbaQ on the Control Tablet.

   If the target's Firmware needs to be updated, simply download the new Firmware onto the target's USB key from the website
   www.SportQuantum.com.

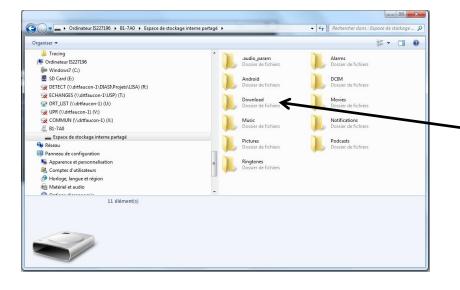
Customers and users are responsible for making sure that they have the most recent available version of the FeedbaQ Application and the SQ10 Target Firmware. Information on new updates will be made available on the website <u>www.SportQuantum.com</u>.

To apply these updates, the customer must have WiFi access to the internet. High-speed internet access is strongly recommended.

## Updating FeedbaQ on the Control Tablet



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Espace de stock Hiérarchique, gén Espace utilis Espace tilis			



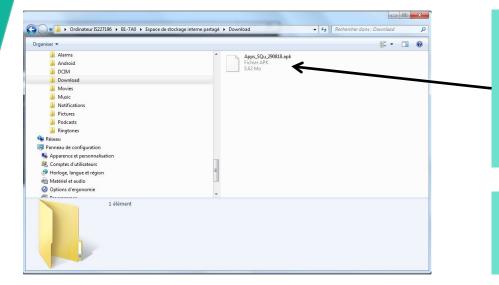
You have received an e-mail from Sport Quantum with a new version of your FeedbaQ Application (or have downloaded it from the site <u>www.SportQuantum.com</u>) with a name of the type: App\_Squ\_X.apk

- Connect the Tablet to your Computer
  - Open Windows Explorer
- Click on the icon on the tablet and choose
   "Internal Storage Space"

Click on "Download"

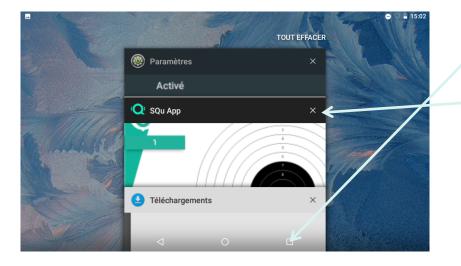
## Updating FeedbaQ on the Control Tablet





Copy and paste the new file received by e-mail from Sport Quantum or downloaded from the site www.SportQuantum.com

Next, unplug the Tablet from your computer

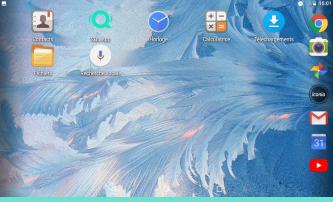


Click on the "Square" at the bottom of the screen

Close the Squ\_App FeedbaQ Application

## Updating FeedbaQ on the Control Tablet

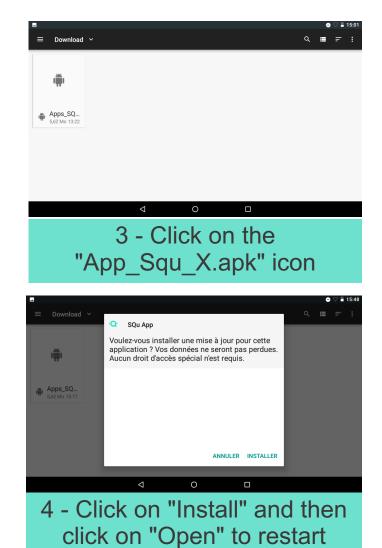




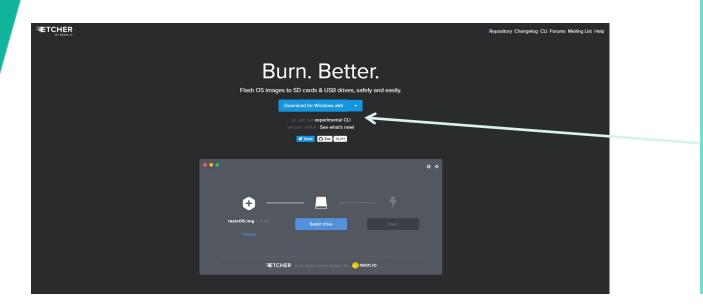
1 - Click on the "Files" icon

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the Application



 Download the Etcher software, which is used to update the software on the target (<u>https://etcher.io</u>). When you do this, make sure you choose your computer's OS correctly.

sportquantum

• Install the software (Etcher-Setup-xxx.exe)

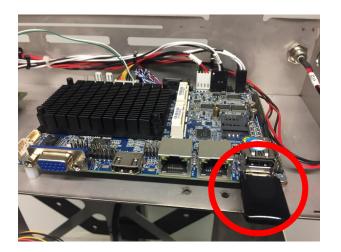
• When installation is complete, open Etcher

You should only perform this operation if Sport Quantum explicitly asks you to do so!



- 1. Unplug the SQ10 Interactive Target
- 2. Remove the USB key from the SQ10 Target:
  - a. Remove the plastic cover from the target
  - b. Remove the USB key this is the smallest key, in the top position, labelled "SanDisk"

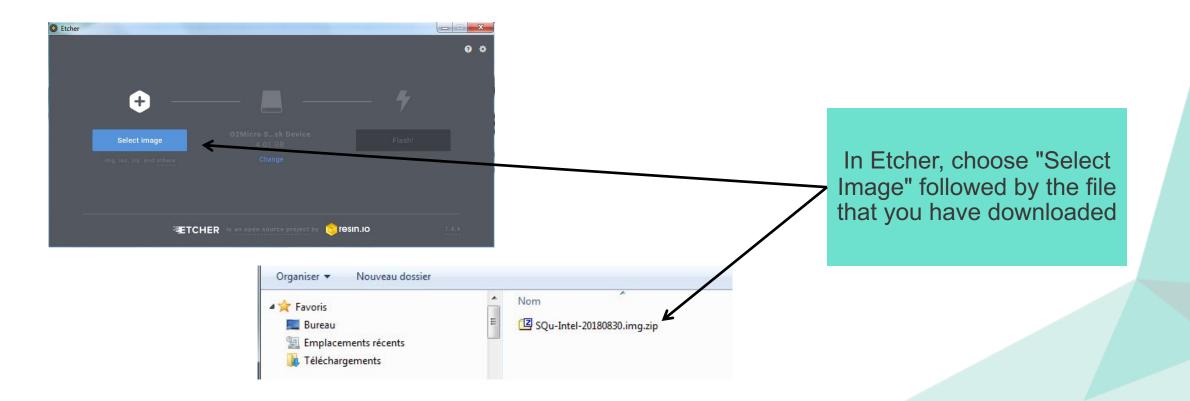




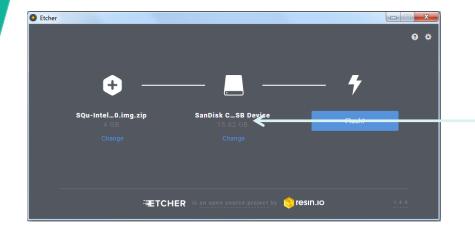




You must now download the new software (Firmware) to the USB keys - To do so, click on the link in the e-mail you received from Sport Quantum







Make sure that your computer selects the SanDisc USB key that you removed from the SQ10 Target If it does not, click on "Change" and choose the correct USB key

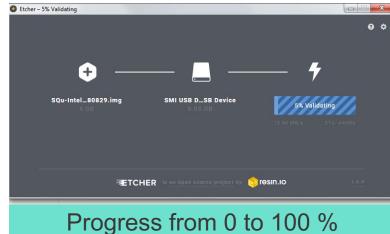


 Click on "Flash" to save the new software (Firmware) on the USB key

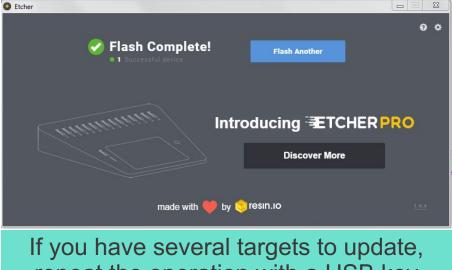




## Progress from 0 to 100 % (approximately 15 minutes)



(approximately 15 minutes)



If you have several targets to update, repeat the operation with a USB key from another target...



## Maintenance





To ensure optimum functionality of the SQ10 Interactive Target, it is important to respect the following maintenance / servicing stages at the recommended intervals:

- The surface of the transparent polycarbonate impact plate of the SQ10 Interactive Target must be brushed with silicone oil once a week or every 250 shots using, for example, a cloth or a paper towel. Do not use mineral oil or a spray!
- ✓ The pellet tray must be emptied approximately every 3,000 shots.
- Check on a regular basis that no dust has accumulated in the air vent of the target hood and clean this vent at least every six months (more often if necessary).
- If, due to electrostatic phenomena, there is dust between the screen and the transparent polycarbonate impact plate, unscrew the polycarbonate plate (four screws) and clean the plate and the screen with a cloth and a product suitable for cleaning TV or computer screens.
- Once a year, it is important to remove dust from the target with a compressed air spray that is suitable for cleaning computers, cameras or any other electronic device.
- ✓ Never use acetone on the polycarbonate plate or on the computer screen!
- If the polycarbonate plate shows any impact damage (the plate's warranty covers 200,000 pistol shots), contact the Sport Quantum After-Sales Service department or the Distributor the target was purchased from.

Failure to maintain / service the SQ10 Interactive Target may cause the target to deteriorate more rapidly and, in particular, may invalidate the target's warranty.

## **Replacing the Top Plate**



The SQ10 Interactive Target contains a measuring plate equipped with sensors and a top plate. This top plate protects the measuring plate and consequently makes maintenance is a lot easier and less expensive. The role of this top plate is to stop the pellets and transmit the shock waves to the measuring plate, which is equipped with sensors. This top plate wears gradually and the level of wear is higher, the greater the shooting energy is.

If used only with a pistol with a power of 6 Joules then the level of wear is very low and the top plate only has to be replaced after several tens of thousands of shots and / or years of use. When 7.5-Joule rifles, and in particular competition rifles, are used, the recommended shot density is 100 shots / cm<sup>2</sup>. If this value is exceeded, some parts of the surface will be too damaged to maintain a precision of ½ tenth of a point (125 µm). The target can still be used but its precision will be slightly reduced in places. If, by mistake, a more powerful weapon, for example of 10 Joules, is used then the top plate will be much more impacted. In this case, we recommend that you replace it. This is an inexpensive way of restoring your SQ10 target to its original condition.

To ensure that the top plate transmits the shock plate to the measuring plate with complete accuracy, it is important to make sure that the top plate possesses the necessary qualities and characteristics. That is why we recommend that you only use top plates supplied by Sport Quantum. You can do this by ordering them directly or from the distributor from whom you purchased your SQ10 target.

To increase the lifetime of the plate and reduce maintenance costs, the shooting display is moved regularly in order to ensure regular wear of the top plate and guarantee precision. It is necessary to replace the top plate when the entire area used to display the cards is marked (slight denting of the polycarbonate by  $+ / - 100 \mu$ m). This area is a horizontal strip of + / - 5 cm around the horizontal mid-line of the measuring plate.

To replace the top plate, gently loosen the 2 lower nuts and remove the 2 top nuts from the top plate. Slide on the new top plate, reposition it and firmly tighten the 2 top nuts as well as the 2 lower nuts. If you are in any doubt, please contact the Sport Quantum After-Sales Service or the distributor from whom you purchased your SQ10 target.



## **Precautions**





#### **Dangers Inherent to Sport Shooting**

The SQ10 Interactive Target is intended for **experienced sport shooters** who are fully aware of **the rules and practices of this sport or coached by such persons**.

SPORT QUANTUM customers, as well as any other user of an SQ10 Interactive Target, are aware of these dangers and undertake to respect all of the safety rules applied and relevant to this sport whenever the target is used, regardless of the purpose (demonstration, training, competition, leisure pursuit, etc.) and location (at a sport shooting club, at the home of a sport shooter or any other venue suitable for sport shooting).

The following points, among others, must always be respected:

- ✓ Weapons will be unloaded when they are not to be used immediately.
- ✓ A loaded weapon must always be held by a sport shooter.
- ✓ A loaded weapon must always be aimed at the target.
- $\checkmark$  Nobody must be within the shooting range or close to the shooting range.

This device is not designed to be used by people (including children) with limited physical, sensory or mental capabilities, or people without any experience in or knowledge of sport shooting, unless they are monitored by or receive prior instruction on the use of this device from somebody who is responsible for their safety.

Consequently, SPORT QUANTUM will not, under any circumstances, be held liable for an accident that occurs during the use of the target if the aforementioned rules have not been respected systematically and in their entirety at all times.



### Terms and Conditions of Use to Ensure Safety

In order to ensure the highest level of safety when using the SQ10 Interactive Target, the following points in particular, and without this list being exhaustive, must be respected by the customer and/or user:

- The location in which the Target is installed and used meets sport shooting safety requirements, in accordance with the regulations of the country and the sport shooting rules of use promoted by the International Shooting Sport Federation (ISSF) and the Shooting Sport Federation of the country in which the target is used.
- To stop pellets from ricocheting and injuring users, the shooter must not be too close to the target and should always remain at least eight metres away. If the target is used at a distance of between eight and ten metres (thanks to the distance simulator), the shooter and all spectators must wear safety glasses that fully protect the eyes.
- ✓ All spectators and everyone else must remain behind the shooter.
- $\checkmark$  All safety rules that apply to the use of weapons must be respected.
- ✓ All users and spectators remain under the supervision of a person who is able to enforce all sport shooting safety rules.
- Furthermore, in order to safeguard against the risk of electrocution, it is important never to submerge the lead, plug or device in water or any other liquid.

SPORT QUANTUM will not, under any circumstances, be held liable for an accident that occurs during the use of the target if the aforementioned rules have not been respected systematically and in their entirety at all times.



#### Terms and Conditions of Use to Ensure the Target Functions Correctly (Page 1 from 2)

To ensure the SQ10 Interactive Target functions correctly, it is important to also respect the environmental conditions required to use a target of this nature, particularly:

- In the event the SQ10 Interactive Target, or the Control Tablet (which contains the FeedbaQ Application), malfunctions, suffers a problem or is damaged, the customer and / or user must disconnect the device immediately and contact the Sport Quantum After-Sales Service department, or the Distributor from which said target was purchased, as soon as possible.
- ✓ If the device appears to malfunction during use, disconnect it immediately. Do not use a faulty device or attempt to repair it yourself.
- ✓ If the device falls on to the floor or is accidentally submerged in water or any other liquid, disconnect it immediately and stop using this device.
- ✓ The room temperature must always be between 10 and 35 degrees Celsius.
- ✓ The humidity level must be reasonable and always below 80 %.
- ✓ The SQ10 Interactive Target is not suitable for outdoor activities and must be protected from direct sunlight, rain and dust, in particular.
- The SQ10 Interactive Target is a precision tool. It is important not to drop it and cause it to suffer shocks other than those from the impact of pellets against the polycarbonate plate. The pellets will be fired by a weapon whose power does not exceed the thresholds shown below.
- ✓ The SQ10 Interactive Target must be protected from fire and water.
- ✓ The SQ10 Interactive Target must not, under any circumstances, be subject to chemical, magnetic, electrochemical or electric substances or forces.
- ✓ The electric power and amperage of the target's power supply must be constant and remain between 100 and 240 volts AC 50/60 Hz.
- To avoid invalidating the polycarbonate plate warranty, the power of the weapons used must be below 7.5 joules. The distance between the shooter and the target must always be greater than eight metres.



### Terms and Conditions of Use to Ensure the Target Functions Correctly (Page 2 from 2)

To ensure the SQ10 Interactive Target functions correctly, it is important to also respect the environmental conditions required to use a target of this nature, particularly:

- The target must be mounted with care (the target can fall). The supporting frame must be sufficiently robust to hold the target's weight over a long period of time and to withstand the impact of shots.
- ✓ When mounting the target, it is essential that the Sport Quantum mounting system and the pin used to fasten the target to the angle bar are used.
- The polycarbonate hood must be positioned with care: lift the hood vertically to place the body's lugs into the clamping holes on the hood. Damage to plastic parts in the clamping area can only be caused by incorrect handling. Sport Quantum cannot be held liable for such handling.
- The polycarbonate hood must always be correctly positioned on the target during use, without any exception! Its absence poses serious risks to the target (irreversible damages due to the impacts) and the users (risks of pellets bouncing back). A proven use of the target without its polycarbonate hood voids the guaranty of the latter.
- ✓ The target's transformer / adaptor box and the power supply cable must be protected at all times when shots are fired.
- If the target is used in a room with a large number of WiFi connections, communication between the SQ10 Interactive Target and the Control Tablet may be slowed down. This is not a defect attributable to the Sport Quantum product but to WiFi technology. In this situation, contact Sport Quantum who will be able to offer you other wired solutions that can connect the Interactive Target to the Control Tablet.
- Regardless of the circumstances, it is important never to use a device for any purpose other than that for which it was designed.

SPORT QUANTUM will not, under any circumstances, be held liable for a target malfunction, even during the warranty period, if the aforementioned rules have not been complied with systematically and in their entirety at all times.



# **Guarantee and After-Sales Service**







#### Warranty

SPORT QUANTUM guarantees that all delivered products will be free from any physical and manufacturing defects under normal conditions of use and service for a period of two (2) years from the delivery date.

If a product is faulty, SPORT QUANTUM or the local Distributor may either replace it (with at least an equivalent product) or repair it (with refurbished spare parts or new spare parts), as the company or the Distributor deems fit.

The Customer must give SPORT QUANTUM the time required, as well as the opportunity, to carry out the repair or replacement.

### **Terms and Conditions**

This warranty is only valid if the original invoice (showing the date of purchase, the type of product and, if applicable, the name of the distributor) is enclosed with the faulty product. SPORT QUANTUM reserves the right to refuse to carry out a repair free of charge if these documents are absent, incomplete or illegible.

The warranty is not valid in the cases provided for in the General Terms and Conditions of Sale. Nor does the warranty cover parts affected by normal wear and tear, as specified in the General Terms and Conditions of Use of the products.

## **After-Sales Service**



#### Warranty

- $\checkmark$  New products: two (2) years from the delivery date.
- Repaired products: six (6) months on repaired products and on replaced spare parts from the date of return of the repaired product.

### Management of faults during the warranty period

- A Warranty Return Form (WRF), which can be downloaded from <u>www.SportQuantum.com</u> must be duly completed and enclosed with any faulty item. If no WRF Warranty Return Form is provided, or if it is incomplete, the Customer may be charged for the diagnostic costs.
- The Customer shall bear the costs of transportation to SPORT QUANTUM or the local Distributor. SPORT QUANTUM may decide, at its sole discretion, to reimburse the Customer for these costs in full or in part following the submission of supporting documents.
- ✓ SPORT QUANTUM shall bear the cost of repairing and returning the item to the Customer if the fault is covered by the warranty.
- If the fault is not covered by the warranty, as stated in the General Terms and Conditions of Sale and the General Terms and Conditions of Use of said product, the request will be treated as an out-of-warranty fault.

### Management of out-of-warranty faults

- A Repair Return Form (RRF), which can be downloaded from <u>www.SportQuantum.com</u> must be duly completed and enclosed with any faulty item. If no WRF Warranty Return Form is provided, or if it is incomplete, the Customer may be charged for the diagnostic costs.
- ✓ The Customer will bear the cost of transport to SPORT QUANTUM or the local Distributor and the return shipment costs.
- ✓ For each repair request, there will be an administrative fee be invoiced at their list price at the time of the repair.
- ✓ Labor and the spare parts will be invoiced at their list price at the time of the repair.
- ✓ Please contact SPORT QUANTUM or your Distributor regarding any express repair request.
- ✓ If no fault is found, the Customer will still be invoiced the administrative fees.



## **Contact Details**





# If you have any problems or questions, the Sport Quantum team is available to help you

### ✓ After-Sales Service

E-mail <u>Contact@SportQuantum.com</u>

### ✓ Sport Quantum

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