

The cover features a dark grey background with abstract geometric shapes in mustard yellow and dark grey on the right side. Thin white lines intersect diagonally across the lower right portion of the cover.

SPORTBOT

USER MANUAL

THANK YOU

Welcome to the Sportbot family. By choosing Sportbot, you've taken a step towards unlocking your true potential in tennis. As you flip through these pages, you'll find not just instructions but a commitment to your success.

Every detail, every feature, has been meticulously designed with one goal in mind: to make you a better player and/or coach. But like every journey, it begins with understanding. Please take a moment to read through this manual to ensure not only the safety and longevity of your Sportbot but also to maximize the benefits it offers.

In tennis, as in life, success is a journey, not a destination. I'm honored and excited to be a part of yours.

With gratitude and passion,

Toni Ulčar, Founder



For dedicated tennis players and coaches, the Sportbot [YouTube](#) channel provides a curated selection of tennis tips, drills, operational guides, and machine setup videos. Simply scan the QR code with your phone to access these tailored resources, ensuring you get the most out of your training and the Sportbot experience.



Good to know, before you start using Sportbot

Sportbot is designed for dry and clean playing conditions. Following these few points will help ensure safe operation and consistent performance.

- Before starting, make sure Sportbot faces the net straight. Incorrect positioning affects shot accuracy.
- Keep the launcher and drive wheels completely dry. Moisture reduces grip and may affect accuracy and movement precision.
- Always operate on a dry, firm surface.
- Do not use Sportbot with wet or damp tennis balls. Use only clean, standard-size tennis balls and avoid dirty or damaged ones. Moisture can cause jams or motor damage.
- Always start with a full battery. Low battery can trigger safety mode.

For detailed information read the instructions below.



Version:	Date:
1.2.1	5.8.2024

This manual provides comprehensive information to effectively use and maintain your Sportbot tennis ball machine. It covers safety guidelines, setup procedures, battery care, operational instructions, and maintenance tips. For technical issues, a troubleshooting section is included. The 'Declaration of Conformity' confirms the product's quality standards. Please review this guide thoroughly to ensure optimal performance and safety.

In-depth mobile app presentation can also be found in this [video](#).



TABLE OF CONTENTS

1. Safety..... 3

2. Machine setup.....4

3. Battery life and maintenance..... 7

4. User Interface.....8

5. Mobile application..... 10

6. Mobile application..... 10

7. Ball consistency.....11

8. Launcher wheels..... 11

9. Drive wheels.....12

10. Cleaning and storage..... 13

11. Troubleshooting..... 14

12. Customer service and support.....14

13. Declaration of conformity..... 15

1. Safety

Note: Coaches and tennis club / academy personnel who make the machine available for use in their practices and in their clubs are responsible for conveying these safety precautions to their students and users before operation.

High-Speed Launcher Caution: Sportbot's wheels operate at significant speeds to launch the tennis balls. For your safety, never stand directly in front of the machine when it's turned on. Additionally, avoid placing your hands or any other objects inside it while the wheels are spinning or while the machine is turned on. Only use conventional tennis balls with the machine. Do not use softer or larger balls designed for children's training. This precaution helps prevent accidents and injuries.

Machine Movement Caution: The Sportbot is designed to move autonomously on the court during sessions. Ensure the court is free from any objects or obstacles before activating its movement. This ensures smooth operation and prevents potential collisions. While the Sportbot is carefully designed for safety and effectiveness, it is imperative for users to ensure proper setup and monitoring during use. Sportbot is not responsible for any damages to the court or potential injuries to individuals or property that may occur during its operation.

Battery Precautions: Sportbot is powered by a Lithium-Ion battery, which is designed for efficiency and longevity. To ensure its optimal function:

- Only use the official charger provided with the Sportbot.
- Refrain from exposing the battery to temperatures above 65°C.
- Handle the battery with care and ensure it's not punctured or damaged in any manner.

Dedicated Usage: The Sportbot has been engineered for standard tennis balls only. Introducing other balls or objects can damage the machine and compromise safety. Always ensure the machine is in a dry environment. Discovering signs of the machine being wet will void the warranty.

Child Safety: Tennis is a sport enjoyed by all ages. However, when using the Sportbot near children, always ensure close supervision. The machine's moving parts and high-speed launches might be fascinating to young eyes but can pose safety risks.

Protective Measures: If you ever need to make repairs, adjustments, or even just a quick check, wearing protective eyewear is a necessary precaution. It shields your eyes from any unexpected projections or debris. Make sure to always power off the Sportbot and remove the battery.

Stay Clear of Moving Parts: The Sportbot is a marvel of motion when in action. Parts like the ball feeder and the launching wheel are in constant movement during operation. It's crucial to

remember that even after switching the machine off, the launching wheel might continue to spin for a short while.

Proper Shutdown: After every training session or usage, ensure the Sportbot is switched off and in a stable position. This not only ensures safety but also prolongs the machine's lifespan. Store the Sportbot in a dry, cool place away from direct sunlight to prevent any weather-related damage and to maintain optimal performance.

2. Machine setup

Transportation Handle: Before setting up your Sportbot on the court, it's crucial to familiarize yourself with the handle operation. To extend the handle, effortlessly click the lock button on top of the machine and then lift the handle upwards. Remember, this handle is designed to allow the smooth transportation of the machine across surfaces; however, dragging it up or down stairs is not advisable. Engaging in such activities could damage the handle, and such damages are not encompassed within the warranty. Additionally, always be cautious of rough or uneven terrains to prevent any harm to the machine's base.



Transportation: For transportation purposes, retract the ball container into the machine and collapse the handle. The Sportbot weighs approximately 23 kilograms and can be easily lifted into a vehicle by one person. When navigating uneven terrain or moving the machine to and from a vehicle, it is best to carry the machine by its front opening hole and handle at the back.

Note: It is not advisable to transport the Sportbot on its four drive wheels. Doing so may damage the wheels, motors, and/or internal electronics. This behavior will void the warranty. Always use the two dedicated transport wheels located at the back to move the machine smoothly on the court.

Ensuring Correct Orientation: Now, to initiate the setup, transport your Sportbot to your court. Once there, begin by unpacking the ball container. **Ensure that the machine is oriented precisely to face the tennis net BEFORE each power-on.** At power-on, the machine will store its initial heading angle as 0 degrees.

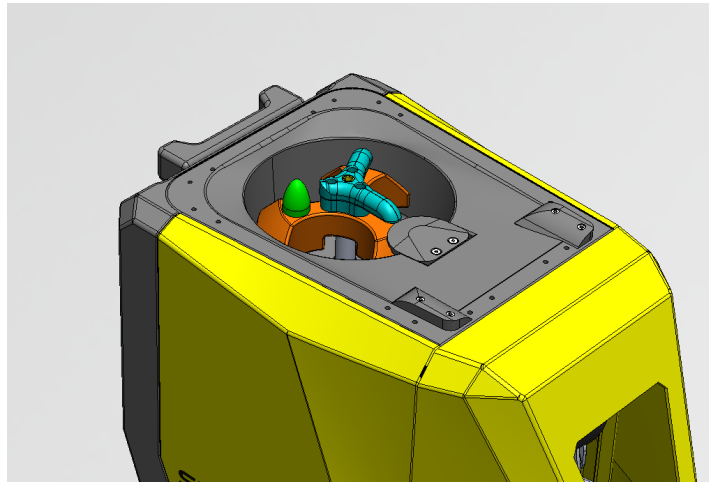


Checking the Court: It's imperative to clear the court of any potential obstructions or objects that might interfere with the machine's movement. Double-check the court's surface; if you're on a clay court, make sure it's neither too abrasive nor excessively soft or wet. This precaution safeguards both the Sportbot and the court surface. The Sportbot has no issues moving on any hard and carpet surfaces, while grass court surface is not recommended.

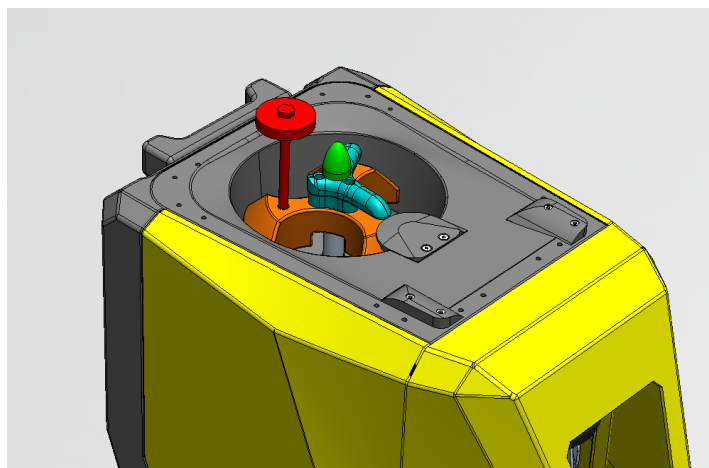
Selecting the Tennis Balls: Pressureless balls are recommended for maximum accuracy and consistency of the shots. Having balls of different quality and softness will decrease the performance of the machine.

Checking the Sportbot: Before switching on the machine, perform a quick check of its battery to ensure no visible damage. Make sure that the battery has enough charge for the duration of the practice by pressing the white status button on the battery. Confirm that the launcher and drive wheels are in optimal condition.

Setting Up the Feeder Mechanism: The Sportbot feeder comes with two threaded pieces (marked with green and red colors) that can be attached to the main feeder sorter (marked with blue and orange colors). These pieces ensure proper stirring of the balls when the container holds more than 30 balls. The Sportbot is delivered to you as shown in the picture below:



This setup allows you to fully close the ball container, minimizing the volume of the Sportbot during transportation. However, this configuration will not allow for smooth operation. It is necessary to unscrew the feeder stirrer (green piece) and mount it to the center of the feeder sorter (blue piece). Then, mount the feeder mixer (red piece) to the previous thread location of the feeder stirrer.



The feeder mechanism setup, shown in the picture above, is now ready for practice.

You can also check the feeder mechanism setup video here:



3. Battery life and maintenance

Before using your Sportbot for the first time, ensure that you charge it until the battery is fully charged. The battery level will be displayed upon startup. To maintain optimal battery health, always charge your Sportbot fully after each session. Our charger incorporates advanced trickle charge technology, ensuring that the battery won't be overcharged, thus safeguarding its lifespan.

Tips for Optimal Battery Life:

- Always charge the Sportbot for a maximum of 2 hours to achieve a full charge. Overcharging can lead to battery overheating.
- Never store the Sportbot with a completely discharged battery. Maintain at least a 30% charge if the machine won't be in use for extended periods.
- Avoid storing or using your Sportbot in locations where temperatures can exceed 40°C (100°F) or drop significantly during winters. Extreme temperatures accelerate battery aging.
- The ideal storage temperature for your Sportbot is between 18°C–28°C (64°F–82°F), in a location shielded from direct sunlight.
- If battery performance diminishes over time, replacement batteries are available for purchase.

Remember, regular and proper battery maintenance ensures not only optimum performance but also extends the life of your Sportbot.

4. User Interface

The Sportbot's User Interface (UI), located at the back of the machine, provides a tactile and visual method for adjusting various ball delivery parameters, especially useful **for those who wish to operate offline without the mobile app**. At the heart of the UI is a multi-functional knob. This knob can be rotated to adjust settings within a menu and pressed to navigate between different menus.

Directly above the knob is a Bluetooth LED indicator, showing the machine's connectivity status with the mobile app. Below the knob, two sets of LEDs give immediate visual feedback on the current settings: one set for intensity level and another for specific ball delivery menus, namely ball speed, ball rotation, ball height, ball width, and shot delay. The default setting upon starting up is ball speed.



Bluetooth



The Bluetooth LED indicator on the Sportbot's User Interface serves as a clear visual guide to the machine's connection status with the mobile app. This LED offers two primary states:

Blinking: When the LED is blinking, it signals that the Sportbot is currently not connected to the mobile app. This could be due to various reasons such as the app not being active, Bluetooth being turned off on the mobile device, or the device being out of the Sportbot's Bluetooth range.

Continuous Illumination: If the LED remains steadily lit, it indicates a successful connection between the Sportbot and the mobile app. With this established connection, users can take advantage of the app's features to control the machine remotely, create custom drills, and access other advanced functionalities.

For users who prioritize a seamless and interactive training experience, ensuring that the Bluetooth LED is continuously illuminated is vital. If there are any issues in establishing a connection, it's recommended to check the mobile device's Bluetooth settings, ensure the Sportbot app is updated, and keep the device within the effective Bluetooth range of the Sportbot.

MEANING OF THE USER INTERFACE SYMBOLS



Ball speed adjustment

Initially set to the lowest speed (intensity level 1), you can easily enhance the ball's launch speed by rotating the knob clockwise. The series of horizontal LED lights provides a visual cue of the current speed setting. For instance, three illuminated LEDs denote a medium speed. This adjustable speed range, from the slowest at level 1 to the fastest at level 5, allows you to customize their training sessions based on their desired intensity, all while benefiting from the tactile feedback of the knob and the clarity of the LED indicators.



Ball rotation

The second LED menu focuses on ball rotation settings. This parameter, essential for refining strokes, begins at a neutral or flat ball setting, indicated by the middle LED (intensity level 3). By turning the knob clockwise, players increase the topspin on the ball, peaking at the highest topspin at level 5. Conversely, rotating the knob counterclockwise introduces backspin, with level 1 giving the most pronounced backspin. The LED lights serve as a visual representation of the current spin setting, ensuring users can effortlessly tune the machine to deliver balls with their desired rotation. Whether aiming for deep topspin shots or practicing against slicing shots, players have the control at their fingertips.



Ball height

The ball height is controlled in the third LED menu. Starting at the lowest setting (intensity 1), rotating the knob clockwise gradually increases the height at which the ball is launched. The LED lights visually indicate the current height setting, offering players the flexibility to train against both low and lofty shots with ease.



Ball width

The fourth LED menu on the Sportbot's User Interface manages the ball's width or side-to-side placement. Starting at a narrow range (intensity 1), the width can be expanded to broader angles by rotating the knob clockwise. At the maximum setting (intensity 5), the machine

delivers random oscillations, challenging players with unpredictable ball placements across the court.



Shot delay

In the fifth and final LED menu, players can adjust the delay between consecutive ball launches. The default delay is set at 3 seconds, corresponding to intensity 3. By manipulating the knob, users can either decrease or increase this interval, customizing the pace of their training session to best match their skill level and workout intensity.

5. Offline drill mode

In offline drill mode, as detailed in Section 4 of this manual, you can operate Sportbot directly via the onboard user interface—no mobile app required.

Once you have dialed in your desired settings, press the START/STOP button to initiate the session. Listen for a beep, indicating that the machine has registered your settings and is ready to begin.

The machine will then start a pre-launch countdown, providing a 12-second delay. This delay ensures you have sufficient time to move to your starting position on the court.

To stop or modify settings during the session, press the START/STOP button once to pause. You can then adjust your settings as needed before resuming.

This mode is designed for simplicity and ease of use, allowing you to focus entirely on your training without the need for digital interaction. Each setting has been calibrated to offer you a comprehensive range of drills that can be easily adjusted to suit your training needs.

6. Mobile application

The Sportbot mobile application allows you to control the machine directly from your device. Within the app, you can adjust settings and create personalized drills to fit your training regimen. For detailed instructions on the app's functionalities, click [HERE](#) or check the QR code:



Important Usage Information:

- **Keep the App Active During Countdown:** When you initiate a drill through the app and a countdown begins (e.g., a 5-second delay before starting), it is crucial to keep the app active on your screen. If the app is closed or your phone goes to sleep during this countdown, the Sportbot will not receive the final start command when the timer reaches zero, preventing the drill from starting. To ensure smooth operation, please keep your screen active until the countdown has completed.

Potential Errors:

- **App disconnects during drill execution:** This issue may arise if you move too far from the Sportbot with your smartphone. Moving out of range will automatically stop the machine for safety reasons. The strength of the connection varies based on your smartphone type and your distance from the machine. To resolve this, please move closer to the Sportbot and reconnect your app.

7. Ball consistency

Regular pressurized tennis balls or pressureless balls are suitable for use with the Sportbot tennis ball machine. Using pressureless balls is advised due to their extended durability and more uniform bounce compared to their pressurized counterparts. However, the uniformity of ball launches is heavily influenced by the condition and size of the tennis balls in use.

Key Considerations:

Mixed Ball Conditions: Combining new and worn balls can result in uneven launches due to variations in their size and bounce characteristics. This inconsistency can also be exacerbated by accumulated dirt and ink on the launching wheels.

Ball Size Variability: Not all tennis balls are the same size. Slight variations can occur, leading to potential disruptions in the launch mechanism. Oversized balls may slow down in the launch channel, which can cause them to be ejected simultaneously with another ball, resulting in double launches and erratic ball trajectories.

Storage and Handling:

Always store your tennis balls in a temperature-controlled environment to prevent them from hardening or becoming too soft. Training in an air dome during winter exposes balls to extreme cold and dome humidity, potentially causing them to freeze and harden. This not only reduces their bounce but also leads to significant wear on the launcher wheels. Initially, this may decrease their grip, reducing the speed and spin with which balls are launched, and can eventually cause failures in ball ejection.

Warning:

If you notice that the balls are not being launched consistently across the net or that they are not being stirred efficiently in the machine, please check the battery level and the condition of the tennis balls. We recommend consulting with us before using a new batch of balls or if you experience issues with ball launching, to ensure compatibility and optimal performance of your Sportbot machine.

8. Launcher wheels

The Sportbot uses specialized launcher wheels to shoot out tennis balls with precision and consistency. These wheels are vital for the machine's primary function and users should be familiar with their operation and care.

Safety Precautions: It's of utmost importance to ensure safety when the machine is operating. Always keep hands and other objects away from the launcher wheels when they are in motion. Accidental contact can lead to injury.

Maintenance and Care: Regular maintenance ensures the longevity and efficiency of the launcher wheels. Over time, the wheels may accumulate dust, dirt, and residue from tennis balls. It's advisable to clean the wheels periodically to maintain optimal performance. Always follow the recommended cleaning procedure provided in the Maintenance and Cleaning section of the manual.

Replacement and Repairs: If you notice any significant wear or issues with the launcher wheels, do not attempt to replace or repair them yourself. Instead, contact the Sportbot team via email info@sportbot.tech for guidance on repairs or replacements. We handle all replacements to ensure the safety and efficiency of the machine.

Calibration: The launcher wheels are calibrated internally to maintain the consistency of ball throws. Users don't need to adjust or calibrate them manually.

Operational Noise: It's normal for the launcher wheels to produce some noise during operation. However, if you observe excessive or unusual sounds, it could indicate a potential issue that requires attention.

Potential Errors:

- **Launchers not spinning:** If you notice the launchers are not spinning, turn off the machine, ensure there are no obstructions, and then restart. If the issue persists, contact the Sportbot support team.

- Angle not adjusting: The machine is designed to adjust the ball's launch angle automatically. If you find that the angle isn't adjusting or is stuck, ensure there's nothing obstructing its movement and restart the machine. If the problem continues, seek assistance from the Sportbot team.
- Balls jammed inside feeder: A jam may occur if an unsuitable ball is used or if the launcher wheels are significantly worn. To remove a stuck ball, first turn off the machine, then gently push the ball to the side of the feeder channel through the opening. For further assistance, please contact the Sportbot support team.
- Balls land only a few feet away from the machine: Please check if the battery has been discharged.

9. Drive wheels

Sportbot uses Mecanum wheels to navigate seamlessly across the tennis court. These wheels allow the machine to move in any direction, thanks to their unique design with small rollers. Understanding their operation and care is crucial for the machine's longevity and your safety.

Safety Precautions:

- Movement: Always be cautious when the machine is in motion. Ensure the court is clear of any obstructions and always stay alert to the machine's movements. The Mecanum wheels are designed for precise movement, but unexpected obstacles can lead to sudden changes in direction.
- Standing zone: Never stand directly behind or too close to the machine while it's operational, especially when it starts or changes its movement direction.

Maintenance and Care:

- Inspection: Periodically inspect the wheels for wear or damage. Due to the unique design of the Mecanum wheels with small rollers, they can accumulate debris or face wear over time.
- Cleaning: Regularly clean the wheels to remove any dirt, gravel, or debris, which might affect their movement or cause unnecessary wear. Always follow the recommended cleaning procedure in the Maintenance and Cleaning section of this manual.

Replacement and Repairs:

If you observe any substantial wear, damage, or any issues with the Mecanum wheels, avoid attempting to replace or repair them by yourself. Instead, reach out to the Sportbot team for guidance. Our team is equipped to handle all replacements, ensuring your machine's continued safety and performance.

Operational Noise: It's natural for the Mecanum wheels to produce some noise during their operation, given their unique design with small rollers. However, should you notice any excessive or unfamiliar sounds, it could signify a potential problem.

Potential Errors:

- Motor failures: If the machine doesn't move as expected or struggles with directional changes, one or more motors driving the Mecanum wheels might have issues. Should this occur, power off the Sportbot and contact our support team.
- Wheel wear: Over time and with extensive use, the Mecanum wheels might show signs of wear. If you notice uneven wear or movement issues, it's essential to address this promptly to avoid further complications.
- Machine rotates unexpectedly: Electromagnetic interference from the surrounding environment may occasionally cause unexpected rotation. If this occurs, please turn off the machine, reposition it facing the net, and then turn it back on.
- Machine does not move or rotate: The machine may fail to move or rotate if there is an electronics malfunction or if it is used on very soft clay courts, where it can become embedded in the ground. To ensure proper operation, please use the machine only on hardened clay surfaces.

10. Cleaning and storage

Cleaning Guidelines for Sportbot:

Your Sportbot will naturally gather tennis ball fuzz and debris from the environment with frequent usage. It's recommended to clean it after every 10,000 shots to maintain its efficiency. To clean the Sportbot, please contact us at info@sportbot.tech for detailed instructions.

Storage Guidelines for Optimum Performance:

- Environment: Always store the Sportbot in a clean, dry environment when not in use. Prolonged exposure to elements such as rain, wind, or excessive sunlight can impact the machine's electrical components and potentially cause damage to its exterior.
- Battery care: If the battery has been left unutilized for an extended period, ensure it's recharged at least to a 30% level every 30 days. This helps in prolonging the battery life and maintaining its efficiency.
- Temperature: For optimal storage, it's advised to keep the Sportbot in areas with temperatures ranging from 18°C to 28°C. Also, always keep it away from areas with prolonged direct sunlight to prevent any potential heat damage.

11. Troubleshooting

Post-use, the Sportbot may collect ball fuzz and court dust on its exterior. For optimal maintenance:

- To clear accumulated fuzz or dust, consider using pressurized air canisters. Alternatively, a lightly damp cloth can be effective.
- For general cleaning, pressurized air canisters are the preferred method, providing a gentle yet effective clean.
- Gently wipe the Sportbot's outer surfaces with a damp cloth to keep it clean and free from grime.
- Avoid using sharp instruments or abrasive materials on the machine to prevent scratches or damage.
- If there's loose debris inside, consider vacuuming to clean the internal components.
- It's crucial never to use a water hose for cleaning the machine's interior. Doing so risks harming its delicate electrical components and poses a potential electric shock hazard. Additionally, this action will void the warranty.

12. Customer service and support

Sportbot guarantees that every newly purchased Sportbot tennis ball machine will remain free from material or craftsmanship defects for a period of 1 year from the purchase date. Any batteries procured directly from Sportbot come with a 6-month warranty from their purchase date. Within the 1-year warranty frame, if any part of the tennis ball machine exhibits defects in material or craftsmanship, Sportbot will either repair or replace it with a new or functionally sound component, at our discretion. This warranty is exclusively available to the original Sportbot machine purchaser.

For straightforward warranty repairs, such as a part replacement, we will dispatch the new component and offer technical support for its installation, eliminating the need to return the entire machine. Our team is available for phone and email assistance via info@sportbot.tech to guide you through the replacement process. Importantly, any machine repairs carried out based on our guidance will not invalidate the warranty. However, if you prefer our team to handle the installation or if the issue is more complex, the shipping costs for sending the machine to us will be borne by you. We will bear the repair costs and the return shipping charges.

The warranty does not cover:

- Damages from misuse, neglect, modifications, mishaps, tampering, maltreatment, fires, wars, revolts, natural calamities, or other unforeseen events.

- Failure on the part of the customer to adhere to the operation instructions provided by Sportbot upon delivery.
- Issues arising from usage on circuits or voltages other than those specified in the user manual.

13. Declaration of conformity

Directive on Low Voltage Electrical Equipment LVD 2014/35/EU

Since we do not develop the power supply ourselves, but purchase an existing one with attached certificates, we do not need to comply with the mentioned directive on our own. The machine is powered by 18 VDC power, which is below the directive's limit.

Electromagnetic Compatibility Regulation EMC 2014/30/EU

This regulation must be considered, and we affirm that the Sportbot tennis ball machine, as of 28th August 2023, is in compliance with this regulation.

Radio Equipment Directive RED 2014/53/EU

Since we transmit data wirelessly, we must comply with the radio equipment directive. The machine communicates with the mobile app via Bluetooth Low Energy (BLE).

Machinery Directive 2006/42/EC: EN 60204-1:2006 + A1:2009 + AC:2010, EN ISO 12100:2010

This regulation must be considered, and we affirm that the Sportbot tennis ball machine, as of 28th August 2023, is in compliance with this regulation.

Biofleks d.o.o., Rojska cesta 19, 1230 Domžale,
Support email: info@sportbot.tech, Toni Ulčar: +386 41 996 357