

# Operation & Safety Manual

Version 2 – 07/26/2024

*FrisMe*

**AeroToss**



*Perfect Catches Made Easy*

# Table of Contents

<b>TABLE OF CONTENTS</b> .....	<b>2</b>
<b>INTRODUCTION</b> .....	<b>3</b>
<b>SAFETY INSTRUCTIONS</b> .....	<b>3</b>
<b>PRODUCT OVERVIEW</b> .....	<b>4</b>
<b>TECHNICAL SPECIFICATIONS</b> .....	<b>4</b>
WHEEL SPECIFICATIONS .....	4
WHEEL MOTOR SPECIFICATIONS .....	4
YAW MOTOR SPECIFICATIONS .....	5
FEEDING MOTOR SPECIFICATIONS .....	5
LINEAR ACTUATORS SPECIFICATIONS .....	5
STRUCTURE SPECIFICATIONS .....	5
<b>INSTALLATION INSTRUCTIONS</b> .....	<b>6</b>
<b>OPERATING INSTRUCTION</b> .....	<b>7</b>
FRISME PARAMETERS .....	8
<b>MAINTENANCE</b> .....	<b>10</b>
WHEEL PRESSURE .....	10
CLEANING .....	10
STORAGE .....	10
<b>TROUBLESHOOTING</b> .....	<b>10</b>
THE LAUNCH BUTTON IS GREYED OUT .....	10
THE DEVICE DOES NOT CONNECT VIA BLUETOOTH .....	10
THE FRISME TOPPLES OR ROLLS WHEN LAUNCHING .....	11
THE FRISBEE IS STUCK IN THE LAUNCHER .....	11
<b>WARRANTY INFORMATION</b> .....	<b>12</b>
<b>CONTACT INFORMATION</b> .....	<b>12</b>

## Introduction

The FrisMe has been designed to provide ultimate frisbee players with an efficient and enjoyable way to practice catching discs. It has been checked for accuracy and usability to provide the best possible user experience. The FrisMe is made of durable materials to ensure it is easy to maintain and last you many years of fun

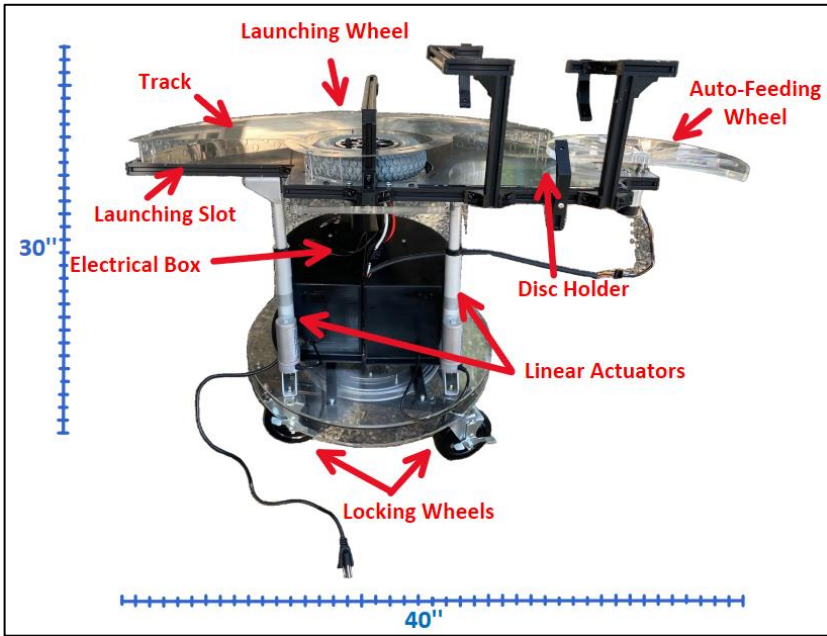
## Safety Instructions

**⚠ WARNING:** FrisMe machines are intended for use by operators at least 18 years of age or at least 12 years of age accompanied by an adult who have been instructed in its use.

**⚠ WARNING:** Carefully read all safety decals affixed to the machine before operating the FrisMe.

- **Know the FrisMe.** Read the Operation & Safety Manual before operation. Learn the machine's limitations and the potential hazards.
- **Use the right frisbee.** The FrisMe is intended for standard ultimate frisbee usage. A standard ultimate frisbee has a 274 mm diameter, 32 mm height and weighs 175 g.
- **Never touch the rotating wheel.** Do not put hands or fingers in the frisbee launcher opening.
- **Inspect the FrisMe before each use.** Make sure there is no damage to the FrisMe and that all parts are properly attached. If any part comes loose, the part should be replaced.
- **Only operate and store the FrisMe in a clean and dry location.** Do not use if it is raining or if the machine is wet. If the machine becomes wet, some safety hazards arise. Allow the FrisMe to completely dry before its next use.

## Product Overview



## Technical Specifications

### Wheel Specifications

Weight.....	1.13 lbs
Diameter .....	7.65"
Load Capacity.....	120 lbs
Maximum Pressure .....	35 psi
Tread Width .....	2"
Width Across Middle .....	1.8"

### Wheel Motor Specifications

Volts .....	12 V
Output Shaft Diameter.....	8 mm (2 mm keyed)
Output Shaft Length.....	35 mm
Motor Velocity Constant.....	473 Kv
Free Speed .....	5676 RPM
Free Running Current.....	1.8 A
Stall Current .....	105 A
Stall Torque.....	2.6 Nm
Peak Output Power .....	406 W

## Yaw Motor Specifications

Voltage .....	24 V
Speed.....	100 RPM
Horsepower .....	80 W
Weight.....	0.28 g

## Feeding Motor Specifications

Gear Ratio .....	90:1
Speed (No Load) .....	122 RPM
Voltage .....	12 V
Stall Current .....	7 A
Stall Torque.....	38 Kg.cm
Weight.....	205 g
Shaft Length.....	0.61"
Shaft Diameter.....	6 mm D-shaped

## Linear Actuators Specifications

Volts.....	12V DC
Current .....	3 Amp
Stroke Length.....	150 mm
Retracted Length .....	260 mm
Extended Length.....	410 mm
Rated Load .....	900 N
Speed.....	10 mm/s
Limit Switch.....	Built In
Material.....	Aluminum

## Structure Specifications

Weight.....	23 kg
Minimum Height.....	25"
Maximum Height .....	29"
Width.....	39" x 21"
Recommended Frisbee .....	274 mmx32 mm, 175 g
Launching platform .....	Stainless steel & extruded aluminum

# Installation Instructions

1. Download the FrisMe app from the following QR code (see Figure 1).



Figure 1

2. Place the FrisMe on a flat surface. The opening slit of the launcher should face the direction you are aiming for (see Figure 2).

**⚠ WARNING:** Do not attempt to adjust the position of the machine with any of the wheels in the locked position. Always unlock all of the wheels, move the device, and relock all of the wheels.

3. Rotate the base of the device to the home position by aligning the arrows on the fixed and rotating base pieces.

4. Lock the three wheels by turning the brakes to the on position (see Figure 3).

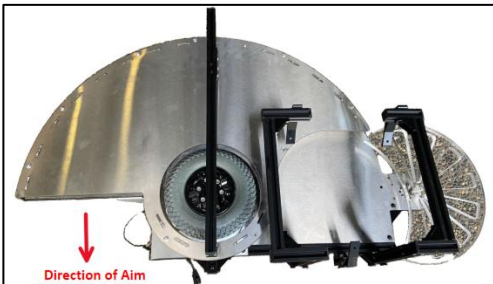


Figure 2

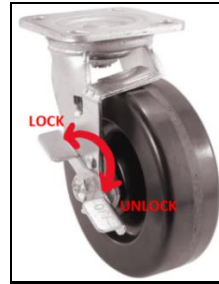


Figure 3

## Operating Instruction

1. Insert one 274 mm disc into the frisbee holder with the back of the disc against the angled bracket and the logo facing up (see Figure 4).



Figure 4

2. Gently rotate the auto-feeding wheel counter-clockwise by hand until it hits the frisbee (see Figure 4).
3. If desired, insert up to two more frisbees into the frisbee holder.
4. Plug the FrisMe into a 120V power outlet.
5. Turn on the FrisMe using the power switch.

*Note: The FrisMe will perform a homing operation to reset itself. This may take a few minutes.*

6. Open the FrisMe app and wait for the FrisMe device to connect. Once ready to operate, the FrisMe app will show the “Ready to launch” message (see Figure 5).



Figure 5

## FrisMe Parameters

- Distance: specifies how far the frisbee will travel when launching.
- Launch Angle: specifies the platform angle from side to side or the tilt (see Figure 6).

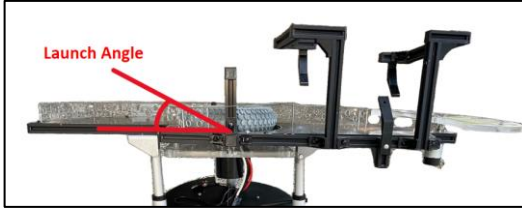


Figure 6

- Launch Direction (Yaw): specifies the direction in which the frisbee will be sent in (see Figure 2).
7. Change the parameters using one of the two options:
- a. Manually: open the settings and modify the distance, launch angle and launch direction (see Figure 7).
  - b. Automatically: click on the red dot and the distance and launch direction will be updated automatically using the position of the player detected by the FrisMe (see Figure 8)

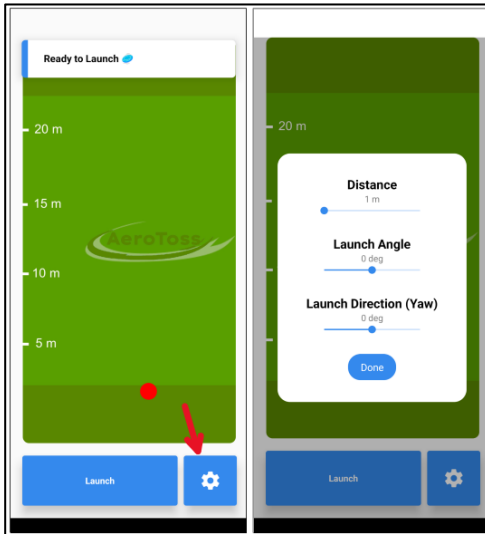


Figure 7





Figure 8

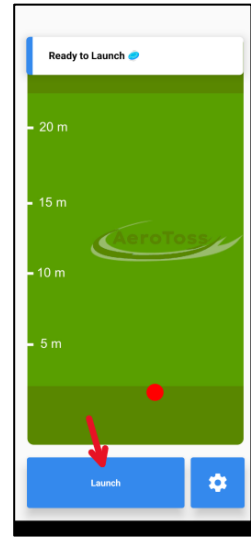


Figure 9

8. Press “Launch” (see Figure 9).

*Note: Make sure the area around the launcher is clear before pressing the launch button.*

*Note: The FrisMe may take a few seconds to adjust its parameter before launching.*

9. Repeat step 7-8 and add frisbees in the frisbee holder as needed.

10. Once you wish to terminate the use of the launcher, turn off the power switch on the launcher.

## Maintenance

### Wheel Pressure

- Maintain the tire pressure to 30 psi.
- To inflate the tire, use a regular bike pump. The valve of the wheel is located on the side of the wheel facing upwards.

### Cleaning

- If dirt or dust manages to accumulate on the FrisMe, use a damp clean cloth to wipe it away.
- Never clean the machine while it is plugged in.

### Storage

- Store the FrisMe in a secure, clean and dry area to prevent the formation of rust. It is recommended to cover the FrisMe to avoid dust from accumulating on the machine. Store the FrisMe with all of the wheels in the locked position.

## Troubleshooting

### The Launch Button is Greyed Out

- Make sure the FrisMe is not currently adjusting itself. When the FrisMe is initially turned on, it goes to its home position which may take a minute to complete.
- Make sure the FrisMe is not obstructed by an object or a person.
- Make sure your device is connected to the FrisMe via Bluetooth.

### The Device Does Not Connect Via Bluetooth

- Make sure the FrisMe is turned on. The device should be plugged in, and the power switch should be in the on position. When turned on, the blue LED is on.
- Try turning the Bluetooth of your device off and back on.
- Reset the FrisMe app by exiting the app, removing the app from the history and loading the app again.
- Reset the FrisMe by turning the power switch off, waiting a few seconds and turning the power switch back on. Try connecting again.

## The FrisMe Topples or Rolls When Launching

- Make sure the FrisMe is positioned on a flat surface.
- Make sure all three wheels are in the locked position.
- Make sure the launcher is cleared, no object should be placed on the launcher.

## The Frisbee is Stuck in the Launcher

**⚠ WARNING:** Never look directly into the launching slot from straight on, serious injury may occur. To look into the launcher, stand beside the machine on an angle.

- Turn off the FrisMe using the power switch and unplug from the power source. Gently rotate the centre wheel counterclockwise by hand, if you feel any resistance stop. If no resistance is experienced the disc may fall from the launching slot.
- Turn off the FrisMe using the power switch and unplug from the power source. With the help of a drill and wrench, unscrew all 7 screws holding the track lid, and remove the lid (see Figure 11). Remove the disc from the track. Place the track lid back on the track, ensuring the wall is securely attached through the slits on the lid (see Figure 11). Screw the 7 screws back using the drill and wrench.

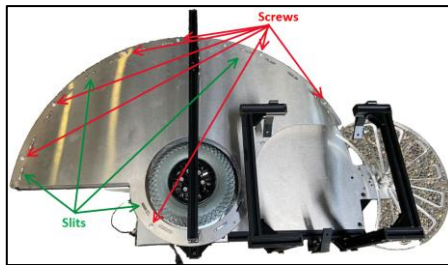


Figure 10

- Ensure the Frisbee used is of standard size :274mm diameter x 32mm height, 175g.

## Warranty Information

AeroToss guarantees that the FrisMe is made from durable materials and agrees that if the machine breaks or fails to operate as indicated within a year of purchasing the device, AeroToss will replace the broken part free of charge. The warranty does not apply if any part of the FrisMe broke due to user's negligence or misuse of the device or due to an accident.

## Contact Information

For more information on the FrisMe, you can contact AeroToss via the following methods:



*Via email:*  
[aerotoss@googlegroups.com](mailto:aerotoss@googlegroups.com)

*Via postal mail:*  
AeroToss – Company 2  
School of Engineering Science  
Simon Fraser University  
8888 University Drive  
Burnaby BC, Canada, V5A 1S6