

EXER·FLY

ULTIMATE SENSOR & APP MANUAL



ONLINE
DOWNLOAD

V.2.0

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Introduction

This guide will take you through powering on the Exerfly equipment, downloading and installing the app, and using the app to get your workout metrics. With the Exerfly app, you can get statistics such as the energy, power, speed, time and force exerted by you during exercises. This feedback is helpful to see if you are progressing in your goals.

The sensor is a rotational sensor that measures rpm, time, and angle, from this data and the inertia of the flywheel, we can calculate many statistics.

The Exerfly app connects via Bluetooth to the Exerfly Sensor.

The Exerfly App is a special type of app that works anywhere your web browser works. It's available on Android, iPad, iPhone, Windows, Mac and Linux and updates automatically. The app is constantly being updated, so you'll see new features from time to time.

For any questions about the app or the equipment, please get in touch with us at: support@exerflysport.com

Or make an appointment via Calendly:
<https://calendly.com/exerfly-support/15min>



Connecting to the power

- 1 Plug the supplied power cable into the power socket under the Ultimate, on the same side as the on/off button on the front of the Platform.
- 2 Turn on the switch and it will turn red.



- 3 Press the on/off button on the front of the Ultimate



Connecting to the sensor

1 Download the app

The Exerfly App is a special type of app that works anywhere your web browser works. It's available on Android, iPad, iPhone, Windows, Mac and Linux.



SCAN ME

Laptop/desktop

For laptop or desktop use, you will need to have Google Chrome installed and have a laptop compatible with Bluetooth. Scan the QR code and run it from there.



SCAN ME

2 Plug in power

Connect the power cable to the Exerfly Ultimate. (pg. 4)

3 Connect to Bluetooth

Select the Bluetooth drop down menu in the app.



Not connected

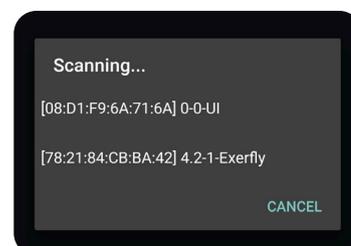


Connected

4 Pair device

Exerfly - "Your name" will appear, then click the 'Connect' button.

Note: Exerfly Bluetooth has a range of approximately 10 meters (32 ft).



Connecting to the sensor

Each time you turn the Exerfly electronics on, you'll first need to calibrate the Exerfly app/rope. This is so the app knows where the point is that the rope crosses over for concentric to eccentric movements.

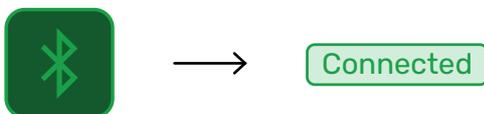
5 Calibrate

So the app knows to calculate metrics for the different phases correctly, you will need to calibrate the sensor when you turn the equipment on. Hold the rope straight out (90 degrees) from the shaft, and click the calibrate button. You will hear a beep when it's successfully calibrated.

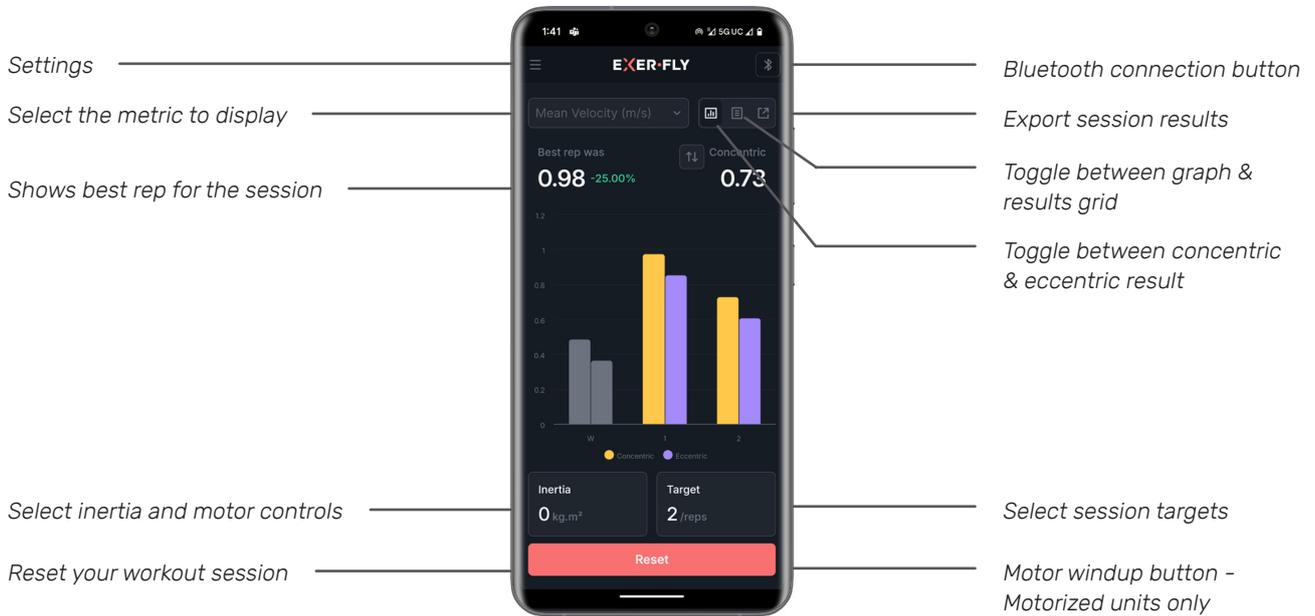


6 Bluetooth connection successful

Once successfully paired with Exerfly Bluetooth, you will hear 3 beeps.

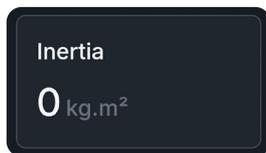


App overview

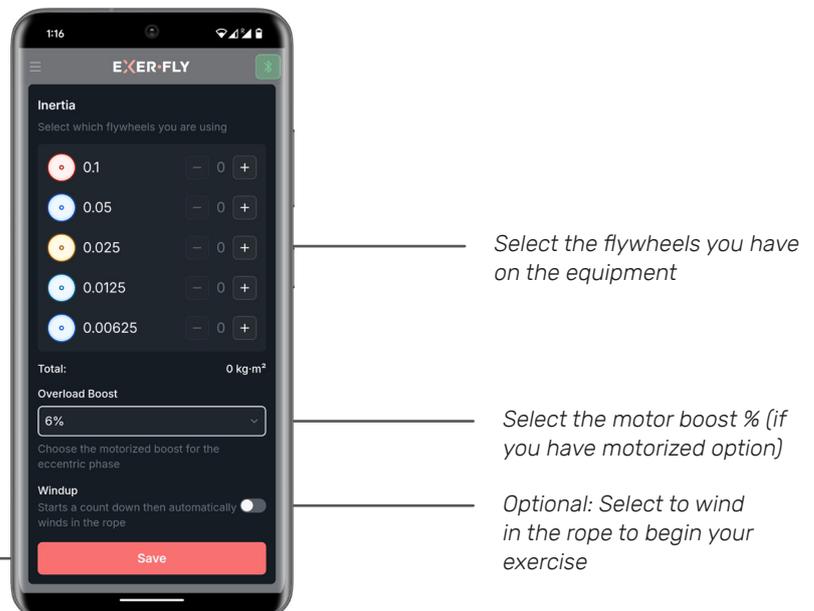


Inertia

Select the 'Inertia' button to open Flywheel and Motorized settings.



Save these settings

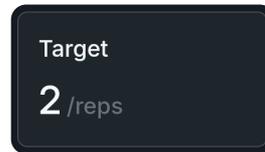


App overview

Target

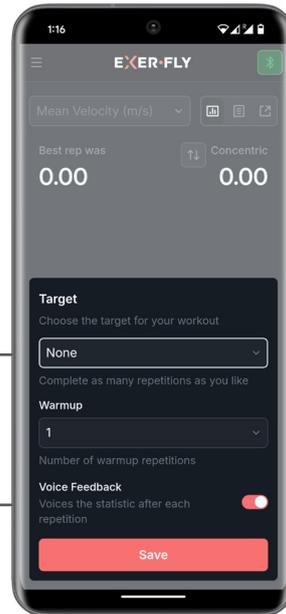
Select 'Target' to set target reps for your workout.

Targets are a useful way to monitor your training goals. The default is none, and that lets you do reps without any goals.



If you don't want to choose a target for your reps, select 'None'. This is the default.

Enable voice feedback during your reps.

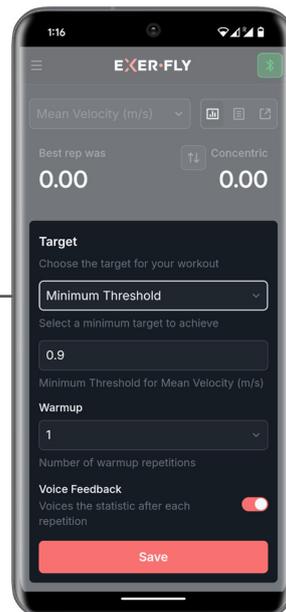


Select how many warm-up reps to do. These don't count towards your metrics.

A) Minimum Threshold

Try and reach a minimum target. The graph will show gray lines where you fail to reach the target.

Work towards a minimum target to achieve



The metric will change based on what you selected in the main screen.

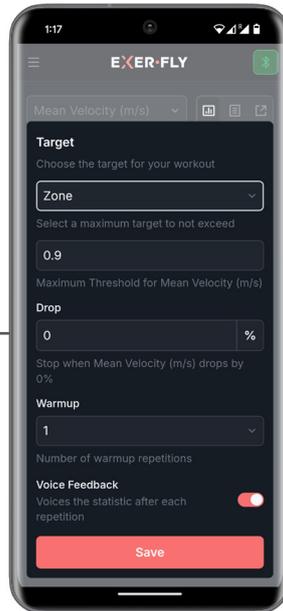


App overview

B) Zone

Try and reach a minimum target. The graph will show gray lines where you fail to reach the target.

How much to drop in the zone from the max. Toggle between absolute value and %

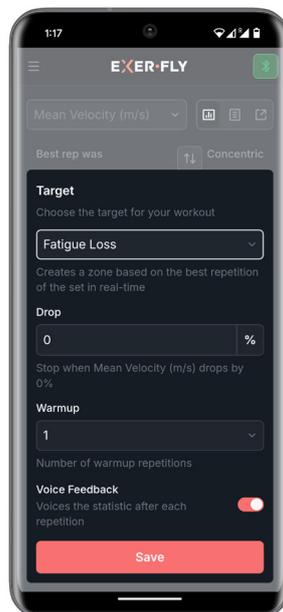


Choose a zone to work within

The maximum metric you want to reach

C) Fatigue Loss

This creates a zone based on the best rep of the set in real time. The graph will show gray bars where you workout outside this zone.



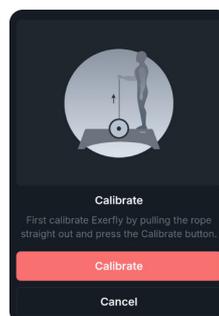
Toggle between absolute value and % for the amount of drop before it stops.

Quick start guide

- 1 Connect to Bluetooth (pg. 4) Once successfully paired with Exerfly Bluetooth, you will hear 3 beeps.



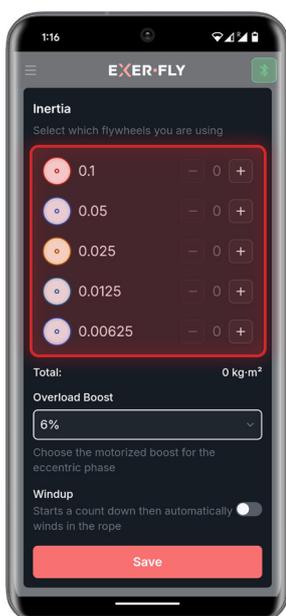
- 2 Hold the rope straight out on your Exerfly. Then press the Calibrate button on the app.



- 3 a. Select 'Inertia'.



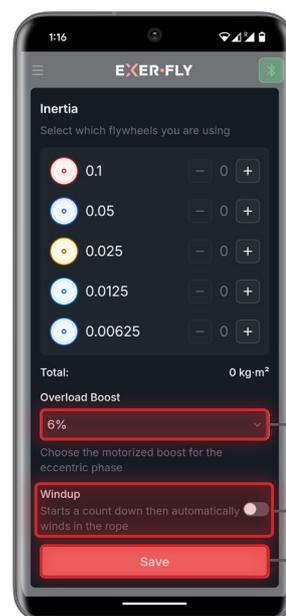
- b. Input which flywheels you will use for your workout.



- 4 If your Exerfly does not have the Motorized option, click 'Save' and skip to step 5.

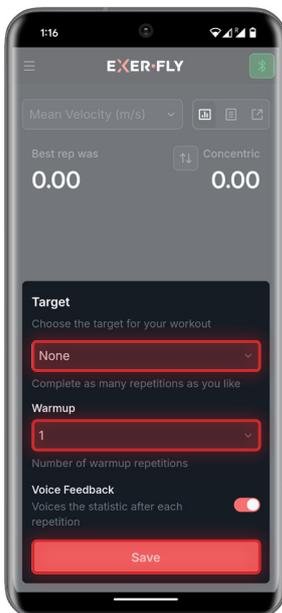
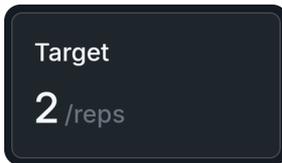
Motorized Exerfly

- a. Select your overload (keep it under 7% for new users).
- b. (Optional) Select 'Windup' if you want the Exerfly to count down and then wind in the flywheel for you.
- c. Click 'Save'.



Quick start guide

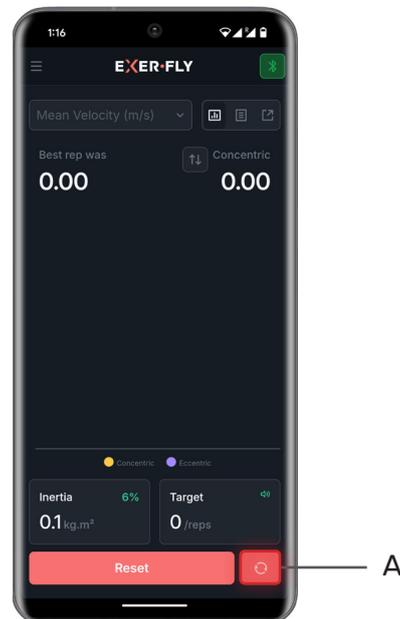
- 5** Optional: Select 'Target' to choose how you want to track your workout (see pg. 7).



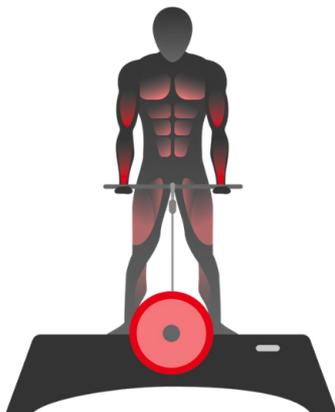
- 6** Ensure that you or the Exerfly user is ready and properly positioned to start the exercise.

If you selected the automatic 'Windup' option: Select the 'Windup' icon (A).

If automatic Windup was not selected: Rotate the flywheel 3 times to wind in the rope manually.



- 7** Start your exercise. The Exerfly App will automatically begin recording the reps and metrics.



- 8** Select 'Reset' to return all workout settings to default.



Statistics

For each rep:

Time	Fastest rep/slowest rep - (time in seconds) Measuring the time it takes for each rep is useful for velocity based training where the athlete tries to complete each rep within a certain time frame, whether it be a maximum time or in between a range of times. Combined with the speed metric, it gives the athlete metrics to chase to gauge their intensity and fatigue.
Energy	Total energy exerted by the user (kilojoules) This is the energy produced in the flywheel by the user exerting force to spin the flywheel. It's useful because it gives a standard measure that the user can track over time.
Peak velocity	Speed the user moves when doing the rep (meters per second) Measures the speed of the movement in meters per second.
Peak torque	The force exerted by the user to spin the flywheel (newton meters) Measures the turning force on the flywheel which is useful to measure the force of rotating limbs into stable positions before and during movements. The higher the inertia of a flywheel, the more torque is needed to move it.
Max force	Max force exerted by the user (newtons) The max force exerted by the user to spin the flywheel.
Total weight moved	(Kilograms & lbs) Conversion of rotational movements to linear units which most people are familiar with when using traditional gym equipment.
Overload %	Percentage (%) Shows how much higher the power of the eccentric phase is compared to the concentric phase in percentage terms. Useful

Statistics

Concentric and eccentric measurements:

Time	Fastest rep/slowest rep - (time in seconds) Measuring the time it takes for each rep is useful for velocity based training where the athlete tries to complete each rep within a certain time frame, whether it be a maximum time or in between a range of times. Combined with the speed metric, it gives the athlete metrics to chase to gauge their intensity and fatigue.
Velocity	Peak and mean (meters per second) Measures the speed of the movement in meters per second.
Force	Peak and mean (newtons) The force exerted by the user to spin the flywheel.
Power	(Watts) The power produced by energy in the flywheel over time shows the user their max power produced during the concentric phase of a rep.
RFD	Peak and mean (newtons) Rate of force development measures of how fast an athlete can develop force.
Time to peak RFD	(Seconds) The time it takes an athlete to reach that peak force.
Torque	Peak and mean (newton meters) Measures the turning force on the flywheel which is useful to measure the force of rotating limbs into stable positions before and during movements. The higher the inertia of a flywheel, the more torque is needed to move it.
Impulse	(Newton seconds) Impulse is a change in momentum, or how force changes over time. See also Angular Impulse.
Angular impulse	(Newton meter seconds) Angular impulse refers to the force an object experiences over time, specifically from torque. It's useful to view this over time or versus displacement of the rope so you can see how much torque is applied to slow down the flywheel at different points of an eccentric

Motorized option

Before using the motor boost option for the first time, users **MUST** practice using it without the motor option enabled. It takes time for new users to get acquainted with the movements of flywheel exercises as they can feel quite different due to the constant force. New users need to get used to absorbing the force at the bottom of a movement, and the motor boost amplifies the need to absorb this force.

SAFETY WARNING:

Using the eccentric boost amplifies the energy of the flywheel in the eccentric phase. Improper use could cause significant injury. Make sure you've had ample warm up and conditioning before attempting to use the motor boost. If this is your first time using the motor boost, always start with a low eccentric overload boost % (eg, 1 - 5%) to get the feeling of what you can handle.

Small flywheels can spin very quickly, so it's safer to use large flywheels to start with because they spin more slowly. Begin with a 1.0 kg.m² inertia (large) flywheel at 1 - 5% boost. Eccentric overload training is very beneficial but also very fatiguing, so you will likely exhibit muscle soreness over a few days if you are not used to it. This is called delayed onset muscle soreness (DOMS).

The use of the motor overload should be used with caution for people with injuries, unfit, deconditioned or elderly people. The Exerfly Ultimate is still able to be used without using the motor. The Exerfly Ultimate uses an automatic wind-in mechanism to get started when using the motor boost.

Eccentric overload boost %

(This option will be displayed if your machine is fitted with the motor).

This feature enables a motor to overload the eccentric phase of your workout. The setting is based on the additional energy given to the flywheel in the eccentric phase of a movement. This is calculated by measuring the energy in the flywheel during the concentric phase, and then switching on the motor to add extra energy by way of speed to the flywheel in the eccentric phase. So, for example if a user produced X amount of energy in the flywheel in the concentric phase and the eccentric overload boost % was set to 30%, then the motor will speed up the flywheel so the energy is X+30% in the eccentric phase.

While the Exerfly can provide the motor boost from 1-80% overload, by default it's set to 1-30% for safety reasons.

To change to the full overload range of 1-80%, make sure you're connected to Bluetooth. Click on the 'Settings' menu Share then the 'Unit' tab. Set the Unit Type to 4.1 and click Save. The app will disconnect, so connect again and you'll now see the drop down for motor settings has 1-80%

Motorized option

WARNING:

Be careful with small flywheels. For small flywheels, use a small number, eg. 1-10% as it doesn't take much energy to spin these very fast.

Getting started

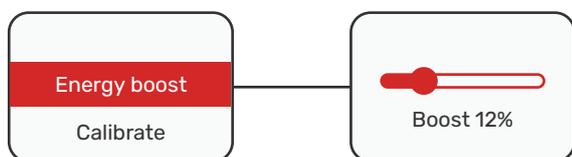
1. Open the Exerfly app and connect the Bluetooth. Make sure the rope is 90 degrees to the shaft and press the Calibrate button.
2. The motor overload is actually separate from the app statistics, so you can use the eccentric overload boost % feature without configuring any other settings such as number of reps etc.
3. Set your eccentric overload boost %. For beginners, set it to 5% and use a large flywheel so it doesn't spin as fast.
4. Make sure you're ready to start the exercise by getting in the right position for your movement.
5. Enable the Windup toggle and press the START button. This will sound a countdown beep the sound will start slowly and increase in speed for around 8 seconds and then the motor will automatically wind in the rope (so you don't have to wind it in yourself). Wait a second for a double beep and then you can start your exercise.
6. Take it VERY slowly to start with, and increase the speed as you feel comfortable.

NOTE: You can change the eccentric overload boost % during your exercise to a higher or lower number.

NOTE: If you decide to abort the training during the Wind-Up, click the STOP button and the motor will be disabled.

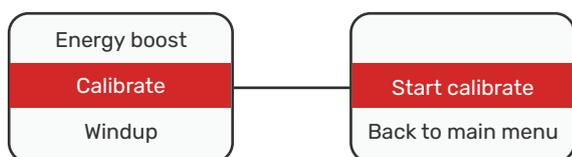
NOTE: Using the windup is optional. You can wind the flywheel in yourself to start with.

Equipment menu options



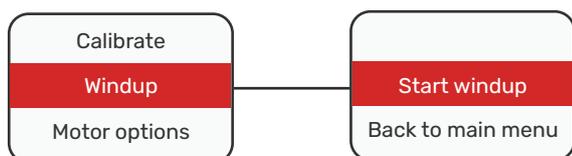
Energy Boost

Adjust the energy boost of the motor output in the eccentric phase. After 5 minutes of inactivity, the motor boost will set to 0% boost.



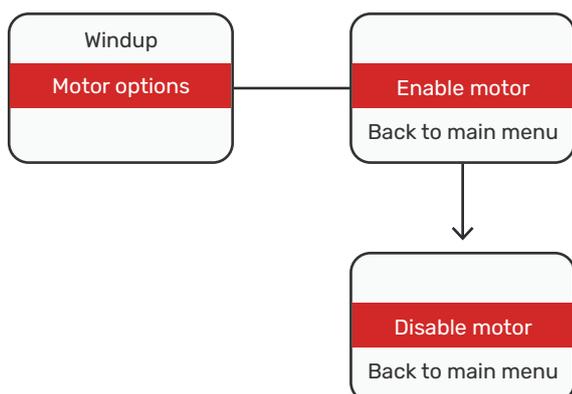
Calibrate

When holding the rope out straight, click the calibrate option to set the zero angle of the shaft so it knows where the concentric and eccentric phases start.



Windup

Start the Windup of the motor, it will wind in the rope. This is optional and the motorized boost will still work if the motor is enabled.



Motor Options

Enable the motor, so the motor will work. Disable the motor to prevent the motor working.

Troubleshooting

Q. Why can't see the Bluetooth connection?

A. Someone else may be connected to it. Turn the Exerfly equipment off then on to disconnect the other user. Make sure you have Bluetooth enabled and location enabled for the app.

Q. How can I download my stats?

A. When you have finished your reps, you will see a download button. Press this and you will be able to download your stats in CSV format and open in any spreadsheet.

Motor troubleshooting

Q. What should I do if I feel like I'm overloading the motor.

A. Add more flywheels on, and/or increase the eccentric overload boost % to a higher amount.

Q. The motor doesn't engage on all reps.

A. This can be one of two things,

1. You're already moving at a speed faster than the motor is set to output for the % overload. Solution: Move to a higher % overload.
2. The motor needs to have a set number of revolutions before it engages, for example if you do very shallow squats, the motor might not engage.
3. Properly recalibrate the rope position.

Q. The motor won't engage.

A. Check the emergency stop button is not pressed down. Twist to release it. Make sure 'Enable Motor' has been selected. Check the motor boost % is not zero.



SCAN ME

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