

LegExx Manual



Exxentric
LegExx Manual
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WARNING

Like any exercise program, it is important that users are capable of performing exercises on this exercise equipment and have verified this with their personal physician.

For Your Safety

Please read and understand the user manual and warning labels prior to use.

- Inspect the machine including the drive belt before use. Damaged or worn parts and warning labels **must** be replaced. See user manual for how to change and cut the drive belt. Do not modify the machine or repair it with non OEM parts.
- Always place the LegExx upright on level ground or on a floor surface.
- Before performing overload exercises, make sure the pulley block snap shackle for the overload handle is properly closed and connected. Also, the machine should be fixed to the ground.
- Flywheels may get slippery when wet. When lifting flywheels, use a secure two-handed grip.
- The machine and accessories are intended for strength training only. Do not use it in any other way.
- The LegExx can deliver a supramaximal* workload. Do not exercise at an intensity above your physical capacity.
- The device is not suitable for children or animals.

During use

Personal injuries may occur if the relevant precautions are not observed.

- Work out at a submaximal** intensity until you are familiar with the equipment.
- Keep away from moving and/or rotating parts.
- Never stop an exercise in top position.
- Never stop a spinning flywheel with your bare hand or bare foot as it may cause friction burns.
- Do not let the moving arm (swing beam) hit the LegExx, absorb the eccentric load before it hits the foam bumper.
- If you feel dizzy or experience pain, stop exercising immediately.
- Never get up from the LegExx while the flywheels are moving. Make sure the flywheels have come to a complete stop before you end the exercise, disconnect, or step off.
- Exercising at maximum intensity may cause temporary staggering and uncontrolled body movements due to fatigue. Exercise caution to prevent falling.
- Exxentric takes no responsibility for any injuries that may occur while using this product.

*) Supramaximal means higher than maximal. This means higher loads than your muscles can produce themselves in a shortening (concentric) action.

**) Submaximal means below maximal. In this case, we would recommend below 75% of maximum intensity.






CONTENTS

This Manual describes the Exxentric Leg Extension Machine, or LegExx, which is a Flywheel Training Device. It will also guide you through its use and how to maintain the device.

Always check exxentric.com/support for latest info and manuals.

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TOOL KIT OVERVIEW

	5 mm hex key
	T30 torx key
	3 mm hex key
	2 mm hex key
	Lock pin

SPECIFICATIONS

	LegExx
Minimum dimensions (bounding box)	
Width	80 cm (31.5")
Depth	108 cm (42.5")
Height	110 cm (43.3")
Space required during use	
Width	100 cm (39.4")
Depth	139 cm (54.7")
Height	110 cm (43.3")
Materials	
Frame	Steel
Flywheel	Steel
Color	Space Grey
Features	
kMeter II built-in	Yes
Quick change flywheel	Yes
No. of flywheels mounted	1 - 4
Inertia range kgm ²	0.005 - 0.28
Inertia factor (min to max)*	x56
Flywheel options (kgm²)	
XS - 0.005	Yes
S - 0.010	Yes
M - 0.025	Yes
L - 0.050	Yes
XL - 0.070	Yes
Weight of machine	95 kg (210 lbs)
Maximum weight allowed on LegExx	350 kg (772 lbs)

Included with the LegExx: Tool bag, printed manual, and a built-in kMeter II.

*) Inertia factor means the highest possible inertia divided by the lowest possible inertia. With the advanced flywheel knob it is possible to reach an inertia factor of x84 and an inertia range of 0.005 to 0.420 kgm².

INTRODUCTION

Detailed overview in printed manual.

Detailed overview in printed manual.

What is the LegExx?

The LegExx is designed for seated leg extension training.

It is a flywheel exercise device that uses the moment of inertia to provide a high and variable resistance in both the concentric and eccentric* movements of the user.

*) Concentric muscle action is when the muscle is being shortened during action. An eccentric muscle action is when the muscle is being elongated during action.

How Does it Work?

The LegExx has a drive belt wound around the end of a shaft located under the seat. Different combinations of flywheels are mounted onto the other end of the shaft.

After taking position and making personal adjustments to the LegExx, the user kicks to accelerate the flywheel, and then resists to decelerate the flywheel as the belt winds in the other direction.

The Flywheel



There are five differently sized flywheels, with inertia 0.005, 0.010, 0.025, 0.050, and 0.070 kgm^2 .

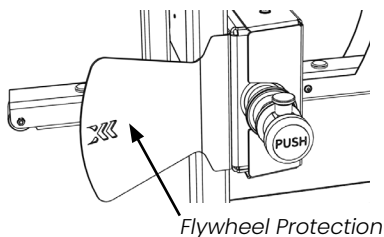
Up to four flywheels of varying sizes can be mounted onto the LegExx, giving it a range of inertia between 0.005 and 0.280 kgm^2 .

Do not mount more than the maximum capacity of flywheels.

To mount or change the flywheel, release the flywheel knob by pulling the pull pin knob. Then remove the flywheel knob and change the flywheel(s). Secure them by reinserting the flywheel knob until it "clicks".

Tip! If the black pull pin knob is hard to pull out you can push the flywheel knob in whilst pulling the pull pin knob out.

Flywheel Protection



We recommend having the Flywheel Protection attached to the LegExx, in order to protect the user from injury.

FEATURES

Principle of the LegExx

The LegExx is a part of Exxentric's Line of Flywheel Training Equipment. The muscles exercised are mainly the quadriceps femoris.

The principle is that you, through muscular force, accelerate and decelerate a flywheel (or flywheels). Exercises with high intensity and forces stimulate the muscles to increase in size and the nervous system to increase activation of the muscles. These effects combined increase strength over time.

Resistance

The resistance is variable and unlimited.

The flywheel has a specified inertia and there is no upper limit to how much kinetic energy you can produce in the flywheel motion. You can think of the flywheel as a weight that weighs more if you put more effort into lifting it. Resistance is variable so if you pull less, the flywheel will resist less.

Every repetition in a maximal set is maximal instead of only the last one which is the case with traditional weights. This results in a higher training efficiency, earlier onset of strength increase, and also hypertrophy*.

The potentially higher exertion on the LegExx may lead to a need for longer resting periods between sessions to fully recover.

*) Hypertrophy refers to an increase in muscle size achieved through exercise.

Eccentric loading

The LegExx provides for increased eccentric workloads.

The skeletal muscles can produce more force in the eccentric, or negative phase. This is difficult to take advantage of with traditional weights, which always weigh the same.

If you accelerate the flywheel during the concentric, or kicking phase and then decelerate in a shorter amount of time, you will have to produce a higher eccentric force. This will be similar to lifting weights that would normally be too heavy unless assisted by a training partner but executing the eccentric (lengthening) phase by yourself. Check out the Exxentric Online Academy for more information on eccentric overload.



<https://academy.exxentric.com>

Mobility

The LegExx is mobile in comparison to traditional weight stack leg extension machines.

By using flywheels as resistance, there is no need for heavy weight stacks attached to the machine, making it inherently lighter than the competition. At just 95 kg (209 lbs), with wheels in the front and handles in the back, it is easy to move the LegExx around on floor surfaces. When moving the LegExx, always put the backrest in its frontmost position. Either grab both handles at the back on your own, or get help from a friend, taking one handle each.



USAGE

Why not visit the Exxentric Online Academy for the free getting started course, including demos, video tutorials, the kMeter intro course, and more.

<https://academy.exxentric.com>



Important



When using the LegExx, make sure to absorb all of the energy in the downward phase and come to a complete stop before the swing beam hits the foam bumper, since this could cause damage to the device over time.

Be sure to adjust the settings correctly to suit your body before starting a training set.

Backrest Adjustment

Adjust the position of the backrest by pulling on the red pull tag and moving the backrest forwards or backwards with the other hand.

Make sure your knees are in line with the center of rotation of the swing beam before starting to exercise. There are six different positions to choose from. These are marked on the left support handle.



Adjustable Shin Pads

Set the height of the adjustable shin pads by holding the black leather handle whilst releasing the pull pin knob.

Lift or lower the beam to reach the desired height of the adjustable shin pads. When lifting the beam, you can use your feet to get an extra push upwards.



The adjustable shin pads should sit comfortably against your legs, preferably right above the feet. There are five different heights to choose from.

Drive Belt Length Adjustment and ROM Restrictions

Adjust the active length of the drive belt by releasing the pull pin knob and sliding the length adjuster forwards or backwards. Forwards (higher number) results in a longer drive belt and therefore a larger Range of Motion (ROM).



A second way to adjust the length of the drive belt is to pull the drive belt further out through the belt stop. This could be useful in rehab when you want to restrict the extension of the knee joint.

Slightly loosen the drive belt in the belt stop and feed more belt into the top slot, while simultaneously pulling it out from the bottom slot. There is no need to remove the drive belt here, so the magnetic part of the belt can be kept on the other side during this procedure.



When you are happy with the new length of the drive belt, tighten any slack in the belt by pulling at the magnetic end before reattaching it to the beam.

Angle of Flexion at the Knee

On the cylindrical housing there are degree markings to help you decide the angle of flexion of the knee.

When the knee joint is flexed at 90°, the marking on the swing beam points to the 90° marking and when the knee joint is fully extended, the marking points to the 0° marking.



Seat Belt

The LegExx is equipped with a seat belt. Adjust the seat belt by pulling the strap in either direction.



To lock the belt, put the flat part in the buckle. To release, lift the flap of the buckle and pull out the flat part. If you do not intend to use the seat belt, place it behind the backrest and lock it together.



Starting a Training Set

Make sure the drive belt is wound around the shaft and start straightening your legs to accelerate the flywheel.

If the drive belt is not wound around the shaft, use your hand to rotate the flywheel and gather the drive belt around the shaft, then straighten your legs to accelerate the flywheel. In normal use the end position should be around full extension or slightly shorter. Hyperextension is not recommended.



Decelerate the flywheel on the way down when flexing your knees and stop at the bottom. After two to three repetitions you should have reached your desired training intensity. Perform your training set, usually 6-12 repetitions at the desired intensity.

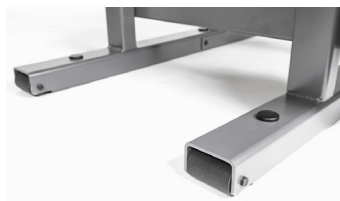
**Make sure you get an adequate amount of rest between sets.
Use the support handles on the sides for extra stability.**

Mounting for Assisted Overload Training

It is strongly recommended to bolt the LegExx to the floor if it is to be used for assisted overload training.

Screws for mounting are not included, use the appropriate screws for your floor specifications. Exxentric takes no responsibility for the mounting of this product and recommends seeking assistance from a professional.

To access the screw holes, unplug all four plastic inserts on the bottom beams of the LegExx.



Assisted Overload Training

For assisted overload training, attach the overload handle. Make sure the snap shackle on the swing beam is properly closed before use.



Assisted overload training is achieved by pulling the overload handle whilst extending your legs to accelerate the flywheel. Then, you can absorb all of the energy in the excentric phase using only your legs. Either the user themselves pulls the overload Handle, or an assisting trainer or spotter does.



Selecting Inertia

Inertia will dictate the speed and hence the type of resistance training you are doing.

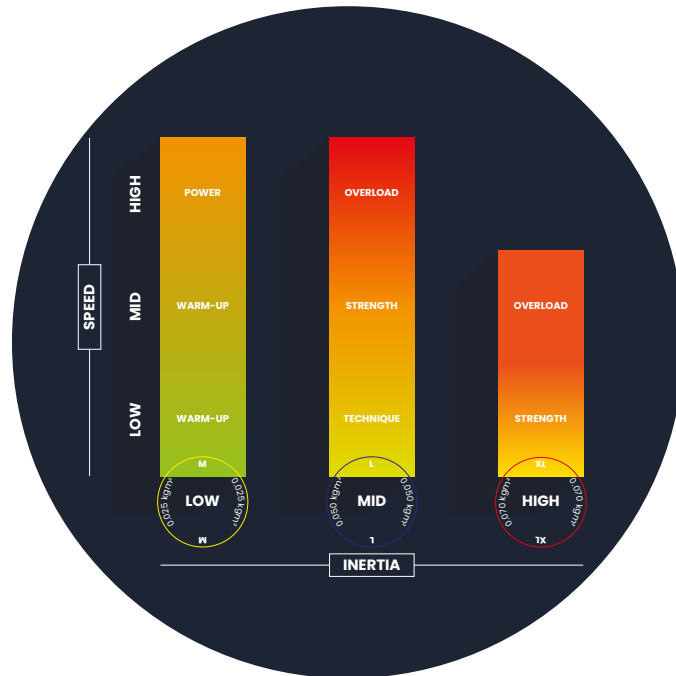
Lower inertia will lead to movements with higher speed, less force and higher power. For max strength; slow and controlled movements with a high force and low speed are warranted, and hence more inertia is used.



The flywheel workout zones can be helpful, if you want to read more about this, scan the QR code, or use the following URL.

<https://bit.ly/2NENUNE>

FLYWHEEL WORKOUT ZONES



Warm-up

Low intensity and low to medium inertia

Power

Max intensity at low inertia

Technique

Medium inertia and low intensity

Strength

Medium to high intensity at medium to high inertia

Higher Inertia

More eccentric overload

For all Exxentric devices, we want to stress that new exercises and users should be taught using **MEDIUM inertia and LOW INTENSITY**.

Since this will be slow, controlled and submaximal forces, it is easier to correct and there is less risk of injury or technical error. When the technique is correct, increase the intensity and/or lower the inertia for higher speed and more power.



For more information and advice visit the Exxentric Online Academy.

<https://academy.exxentric.com>

LEGEXX MAINTENANCE

Adjustment of Bushings

After a while in use, the stop screws in the bushings might need to be tightened.

Use the 2 mm hex key from the tool kit and tighten the bushing stop screws in the shin pad height adjuster and the backrest adjuster. Tighten as much as you need to make it run smoothly without too much sideways movement.



Drive Belt Cautions

The drive belt and its attachment to the shaft is the most sensitive part of the LegExx. Be attentive to wear and check regularly.

When the belt shows signs of wear and tear, trim the end by cutting off the damaged area or replace it with an original spare drive belt.

Trimming a Worn Belt

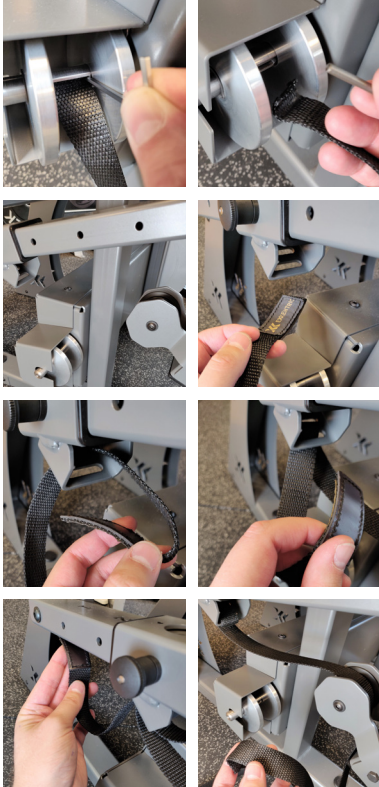


If damage to the drive belt occurs close to the shaft it is possible to cut off the damaged end and reattach the new end.

Optional – Remove shaft cover, use T30 torx key from the tool kit.

1. Unwind all of the belt from the shaft and use the 3 mm hex key to push out the lock pin.
2. Cut off the damaged belt. Harden the edge with a lighter.
3. If you removed the belt from the shaft, put the edge of the drive belt back through the side of the shaft with the smaller groove.
4. Fold the belt around the lock pin and pull the belt and pin into the wider groove in the shaft.
5. The Belt automatically locks into the groove when you pull it tight.
6. If the shaft cover was removed, put it back in place.

Replacing the Drive Belt



Follow the steps below to completely replace the drive belt:

Optional – Remove shaft cover, use T30 torx key from the tool kit.

1. Unwind all of the belt from the shaft and use the 3 mm hex key to push out the Lock pin.
2. Disconnect the other end of the belt from the belt stop, found on the drive belt length adjuster.
3. Remove the old belt completely. Take the new belt and start by attaching the end with the magnet to the belt stop. Make sure the belt is inserted in the correct manner so that the belt does not slip during use. The magnet should be facing the beam that the drive belt length adjuster slides on.
4. Run the belt through the top of the pulley component and towards the shaft between the flanges.
5. Lock the drive belt in the shaft with the pin, see last steps of trimming worn belt for more detailed instructions.
6. If the shaft cover was removed, put it back in place.

Maintenance of the Screws

The LegExx center parts (shaft, bearings, flanges, belt stop beam, and cylinder beam) are subject to heavy and repeated forces.

We recommend that you inspect the screws and tighten them quarterly, or more often in frequent use

KMETER

Overview

The kMeter Module allows you to connect your smartphone or tablet with your LegExx and get live training feedback.

The LegExx has the new generation of kMeter module (kMeter II) built-in. The kMeter II is powered by two 1.5 volt AA batteries.

How it Works

The kMeter Module sends wireless data over Bluetooth to the corresponding iOS or Android app.

The App uses rotational data and user-input of inertia to calculate and present the power in real-time and set a summary containing a wide range of metrics. Users can also input training data after a completed set. All data can be stored in an online database for later viewing in the app or to be exported to Excel.

The kMeter II has a sample rate of 10.000 Hz and receives 64 impulses per revolution of the flywheel. This means it can accurately sample data up to rotational speeds of 155 revolutions/second.



Exxentric

Download the App in App Store or Google Play.



App Store



Google Play



The kMeter II (art. no. 20002) is CE-marked according to 2014/53/EU Radio Equipment Directive, and FCC and ISCED-certified.

About the kMeter



For information about the metrics and their precision, and how to connect the kMeter module with the app, check out the kMeter II Quick Start Guide or the Exxentric Online Academy.

<https://academy.exxentric.com>

SUPPORT

More Information

For downloading the latest manuals, instructions and tutorials:
www.exxentric.com/support

For maintenance procedures or to continue reading this manual:
www.exxentric.com/maintenance

Blog posts covering flywheel science and physiology:
www.exxentric.com/news

For demos, getting started tutorials, the kMeter intro course, and more, check out:
<https://academy.exxentric.com>

(Register with your email to use this free service)

Assistance

For any problem concerning our products or apps, please go to the relevant link below:



Technical Support
exxentric.com/technical-support



App Support
exxentric.com/app-support



Exxentric

App for iOS and Android. Shows real-time data from the kMeter and kMeter II module.

For more information, see the previous kMeter section.



App Store



Google Play



Flywheel Training

For iOS and Android. Inspirational guide for new users.
Get access to tutorials, create a program and get started!

WARRANTY

January 1, 2022

- 1) THE TERMS AND CONDITIONS' APPLICABILITY. This Agreement applies only to the sale of products in new condition in the EU or in a market where a certified dealer is established. For the individual consumer, warranty runs from the original delivery date for two years in parallel with a three-year legal guarantee. For trade companies, warranty runs for two years from the original delivery date and with the conditions set out in this agreement.
- 2) PARTIES OBLIGATIONS. Exxentric undertake - with the exception of the cases specified in paragraph 5 below - in case of malfunction or damage to the product to replace defective parts. More extensive repairs are to be carried out by an Exxentric designated service center.
- 3) WHAT CONSTITUTES AN ERROR. Errors are professionally determined deviations from the normal standard that manifests itself during the period specified in paragraph 1. The product is considered defective if it differs in the manner stated above and is not, according to Exxentric, likely to have been defected due to accident or circumstances that are otherwise attributable to the buyer.
- 4) TROUBLESHOOTING. Rectification of defects or delivery of replacement parts will take place within a reasonable time after the buyer notified the error and, if so requested by Exxentric, made the product available to the action of a designated service centre. What is considered a reasonable time is determined by the buyer's need for the product, the nature and scope of the error, difficulties in determining the error and access to spare parts and engineering capacity.
- 5) LIMITATION OF SELLER / EXXENTRIC'S COMMITMENT. Exxentric's responsibility does not cover the product's consumable parts and wear parts such as for example drive belts, extension straps, rubber protectors for the pulley block, snap hooks, rubber mats and pads. Also, the warranty does not cover what is considered as normal wear and tear, normal corrosion, or defects in paint or other coatings. Also, the buyer may not claim rectification for deficiencies which the seller can show were caused by for example:
 - that repair or service was done elsewhere than at an authorized Exxentric service center
 - that non OEM components were used
 - that use of the product continued after the defect was first noticed
 - that the product has been used in ways for which it is not designed or sized
 - that the product has been abused
 - that the product has not been used with normal care
 - that the care regulations as per existing instructions have not been carefully observed.
- 6) TRANSPORT SAFETY AND TRANSPORTATION EXPENSE. For repair of extensive defects, the purchaser shall bring the product to a designated service center. Buyer shall, after the defect has been remedied, pick up the product from the seller or the designated service center. The product can also be dispatched by the buyer to the seller or to the designated service center. Such transportation shall be at the buyer's sole risk and expense. Replacement parts which the buyer can be expected to replace on his/her own are delivered free of charge to the buyer.
- 7) LIMITATIONS OF LIABILITY. For the individual consumer, the limitation of liability as stated in the current applicable Consumer sales rules applies. The buyer is therefore not entitled to compensation beyond what is covered under (2). For commercial customers, Exxentric's liability is limited to what is stated in this agreement. The buyer, therefore, is not entitled to compensation for economic damages beyond the terms specified above, ie not for personal injury or property damage. Buyer is reminded once again the importance of the product being handled with care and in accordance with the operating manual's instructions!

DISPUTES. Disputes concerning the interpretation or application of this Warranty Agreement shall in the first instance be resolved by agreement between the parties. If such an agreement can not be reached, the dispute shall be settled finally by arbitration at the Stockholm Chamber of Commerce Arbitration Institute (the Institute). The Rules for Expedited Arbitrations shall apply unless the Institute with regard to the case, the amount in dispute and other circumstances, determines the rules of the Stockholm Chamber of Commerce Arbitration Institute shall apply to proceedings. In the latter case, the Institute shall also decide whether the arbitral tribunal shall be composed of one or three arbitrators.

Exxentric Online Academy

Home of Exxentric's online course offering:

- Free Webinars and Tutorials
- Complete Online Certification Courses (Level I and Level II)
- And much more

Start here

