

kBox4 Manual

Version 8.5, October 2018

<http://exxentric.com/manuals>

kBox4 Pro - Lite - Active



Personal injuries may occur if these precautions are not observed

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

Never step off the kBox while the flywheels are moving. Make sure flywheels come to a complete stop before you end the exercise, disconnect or step off.

The kBox can deliver a supramaximal* workload. Do not exercise at an intensity you cannot manage.

Workout at a submaximal** intensity until you are familiar with the equipment.

Don't let the pulley block hit the kBox, absorb the eccentric load BEFORE it hits the kBox.

If you feel dizzy or experience pain, stop exercising immediately.

Exxentric takes no responsibility for any injuries that may occur.

Keep away from moving and rotating parts.

This machine and accessories are intended for strength training only. Do not use in any other way.

Exercising at maximum intensity may cause temporary staggering and uncontrolled body movements due to fatigue. Exercise caution to prevent falling.

The machine might get slippery when wet. Use clean shoes and dry machine with a cloth if it is wet. Shoes with spikes, dirt, stones can damage the rubber surface of the kBox.

Never stop an exercise in top position.

Both feet have to be placed on the kBox during exercise if it's not fixed to the ground.

Always place the kBox on a leveled surface.

If you have balancing problems, be sure to have support by a spotter or fixed object like a wall.

Always make sure children and pets cannot access the machine when in use.

Inspect the machine 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.

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

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

CONTENTS

This Manual covers a description of the Kinetic Box, or kBox, a Flywheel Exercise Device, a guide to its use, and how to maintain it.

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

SPECIFICATIONS	Page 5
INTRODUCTION	Page 6
FEATURES	Page 10
USAGE	Page 12
SUPPORT	Page 16
MAINTENANCE	Page 17
KMETER	Page 20
ACCESSORIES	Page 21
WARRANTY	Page 22

CAUTION!

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

SPECIFICATIONS

	Active	Lite	Pro
Footprint in cm (inches)			
width	76 (30")	76 (30")	98 (38,5")
depth	51 (20")	51 (20")	63 (29")
height	21 (8.5")	21 (8.5")	23 (9")
Top surface in cm (inches)			
width	68.5 (27")	68.5 (27")	90 (35.5")
depth	43.5 (17")	43.5 (17")	55 (21.5")
area [sq.m]	0.29	0.29	0.50
weight	15 kg (33 lbs)	9.5 kg (21 lbs)	15.5 kg (34 lbs)
Materials			
chassi	steel	aluminium	aluminium
flywheel	steel	steel	steel
color	bronze	brown	brown
Features			
kMeter II built-in	optional*	yes	yes
drive belt autoretract	yes	yes	yes
quick change flywheel	yes	yes	yes
foot support option**	yes	yes	yes
no. of flywheels mounted	1-2	1-4	1-4
inertia range kgm ²	0.01 - 0.10	0.01 - 0.20	0.01 - 0.28
inertia factor (min to max)	x10	x20	x28
angle adjuster	yes	yes	yes
can attach foot support	yes	yes	yes
Flywheel options			
0.010	yes	yes	yes
0.025	yes	yes	yes
0.050	yes	yes	yes
0.070	-	-	yes

*) Active is kMeter II ready. It can be pre-installed from factory or later by customer.

***) Pro has a larger platform and more positions for individual adjustment of the foot blocks.

Included with kBox4 Active, Lite and Pro platforms: angle adjuster, attachment kit, tool bag, printed manual, spare drive belt, protective casing for mounted flywheels, built-in kMeter II (Lite and Pro only).

INTRODUCTION

What is it?

The kBox is a self-contained, compact exercise platform for various strength movements. It is a flywheel exercise device and uses the moment of inertia to provide a high and variable resistance in both the concentric and eccentric* movements of the user.

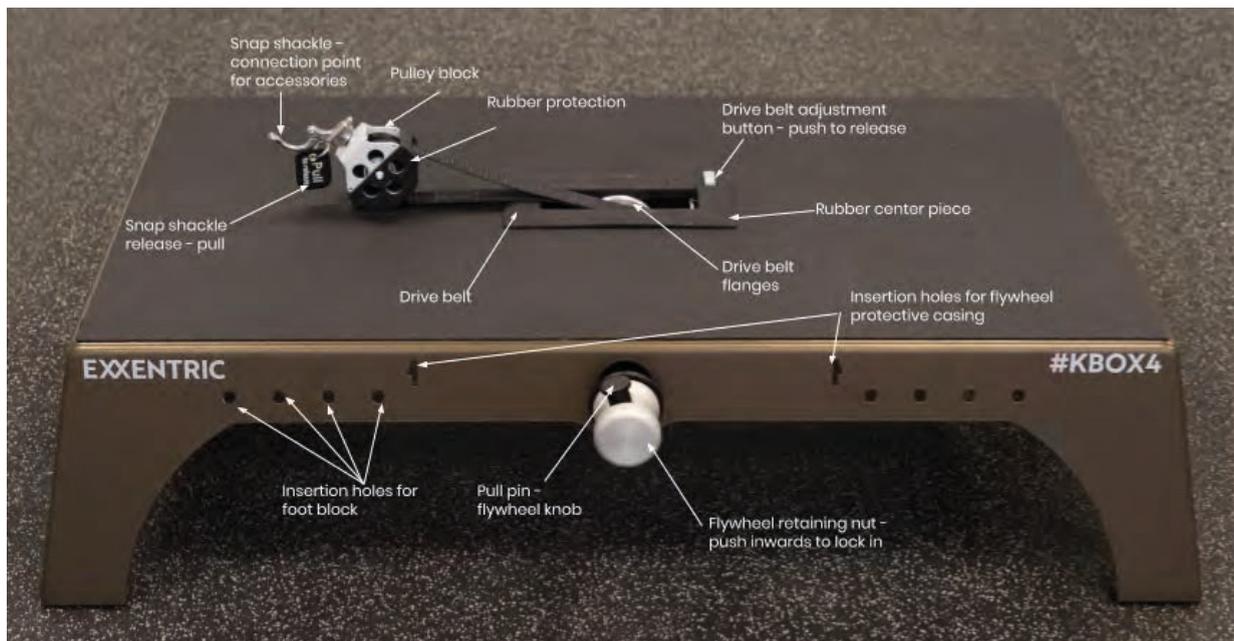
**) concentric muscle action is when the muscle is being shortened while an eccentric muscle action is when the muscle is being elongated during action. In some literature, concentric and eccentric is called positive (shortening) and negative (lengthening) phase.*

How Does It Work?

The kBox has an adjustable-length drive belt wound around a shaft located beneath the platform. Different combinations of flywheels are mounted on the end of the shaft.

Using hand grips or a harness attached to the Pulley, the User pulls to accelerate the flywheel and then resists to decelerate the flywheel as the Belt winds in the other direction.

All kBox models has a recoil auto-retract system. A Drive Belt Length Adjustment Button allows for quick adjustment of the Belt length for the type strength work desired. Push the button to release and adjust length or just push button to automatically retract the belt. An extension belt is used for overhead work (for example military press).



INTRODUCTION (cont.)

Setting Up the kBox

If training without both feet on the kBox is anticipated, the platform must be attached to the floor or weighted down so it cannot move.

Floor attachment kit

The floor attachment kit consists of an attachment plate and a cam lock belt. This package is included with all models and can be used for attaching the kBox to the floor. The attachment plate will need to be fixed to the floor or a heavy wooden board. The kBox will then be anchored to the plate by the belt.



Flywheel protective casing

The flywheel protection piece has to be assembled after unpacking the kBox. This is highly recommended in order to protect against injury. Remove cover plastic, bend and insert at the bottom of the kBox and then the holes in the front of the chassi. See pictures below.



INTRODUCTION (cont.)

The Flywheel

There are four different flywheels with inertia: 0.01, 0.025, 0.050 and 0.070 kgm². They all fit the kBox4 Pro and all but the 0.070 kgm² fit the kBox4 Lite and Active. You can mount up to four flywheels on the kBox4 Lite and Pro and two flywheels on the kBox4 Active. This will give a range of inertia between 0.010 and 0.280 for PRO and 0.01-0.10 for Active. Do not try to mount more than the maximum capacity of flywheels.

Experimentation will determine which configuration is required for your level of training. Mounting or changing flywheels is done by releasing the Retaining Nut by pulling the knob on its side, removing the nut, changing flywheel(s) and securing them by pushing the Retaining Nut back on until it makes a clicking noise.

Tip!

If the black knob is hard to pull out you can push the flywheel retaining nut in while pulling the black knob.



Foot Block

The Foot Block can be positioned straight or with an angle and is secured by sliding the pins into the holes in the front and the back of the kBox4 chassis. Use the side with the lower angle for lateral movement and the other side if you just want to maintain foot placement during vertical work.



Angle Adjuster

The Angle Adjuster allows for more horizontal actions in training (e.g. bent over row, swings). Just capture the drive belt with the top of the Angle Adjuster and snap it on. The location for placement is indicated with a sticker. The QR code as well as the link below will lead you to a video showing the Angle Adjuster in use. The Angle Adjuster is included with every kBox4.



For an example of the Angle Adjuster in use:
<https://youtu.be/D6LRVJb0ots>

ç



FEATURES

Principle of the kBox

The kBox is a 'flywheel exercise device'. Which muscle is being exercised depends on which exercise is being performed.

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

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.

Note that...

The potential higher exertion of the kBox may require longer periods of rest between sets and training days to fully recover.

Eccentric Loading

The kBox provides for increased eccentric workloads. The skeletal muscles can produce higher 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 lifting 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(s) but executing the eccentric (lengthening) phase by yourself. Check Training Guide for more information on eccentric overload.

Mobility

The kBox is mobile in comparison to traditional weights. Squatting with the kBox is equivalent to traditional squats which would require a barbell, weights up to 500 lb. for a strong lifter which is practically impossible to carry around. In addition, you don't need rubber mats or racks to use the kBox.

FEATURES (cont.)

Mobility (cont.)

Further on, you do not need spotters to be able to do 1 RM (Maximal repetitions). All this is possible with the kBox which weighs about 22 kg (48 lbs) with one flywheel included and it can be carried and transported easily in an ordinary car. The kBox Lite can even be checked in as luggage when flying.



Ergonomics

Pressure over the shoulders is one limiting factor for many when performing traditional barbell squats. Serious bruising can be seen after heavy sets. Furthermore, the lumbar spine discs are under a lot of pressure, even if the athlete has good technique. With tall people, people with a weak core, or back problems, squatting is almost impossible or accompanied with a lot of discomfort or pain. With the kBox, you are able to work out maximally or closer to maximum intensity since the harness distributes the pressure over the shoulders and reduces the pressure and torque on the lumbar spine.

Work Environment

The kBox is quieter when training. The area does not have to be equipped with sound reducing materials. There is a much lower risk of collision so that more people can work out in a smaller room without the risk of interfering with each other and inducing injuries.

USAGE

Whenever you use the kBox, make sure to absorb all the energy in the downward phase and come to a complete stop before the Pulley Block hits the kBox since this will cause damage to the device.

Foot Placement

Feet are placed differently depending on which exercise you are performing. Make sure the drive belt goes smooth into the device and reposition yourself if it goes against the edges or twists. Use the Foot Block for restricting your stance, lateral push movements or heel support during calf press. Weight down the kBox or use attachment plate if you are not standing on the unit with both feet.



Using the Harness

Attach the Harness to the Pulley with the Harness ends turned inwards (red double-stitched sides towards each other) which gives a smoother contact with the thigh. The snap shackle makes it possible to have an emergency release, just attach a cord in the snap shackle pin for the athlete or trainer to hold and pull to release or pull the tag that comes attached from the factory.

Be sure the Harness fits comfortably and is not too loose (various sizes are available). It should not slip down over the shoulders. Upper chest strap can be loose but the bottom strap has to be more tight for best use.

USAGE (cont.)

Using the Harness (cont.)

Use the Drive Belt Length Adjustment Button to set the Belt length to allow the Belt to fully reach the upper end of the exercise movement. For beginners and rehab patients doing lower body exercises, the top position should be just before all active joints are fully extended. For experienced users, there can be some slack in the top position to minimize strain on the belt and hook at the reversal point. Remember not to stop the movement in an extended position when the flywheel is spinning as this will put strain on your joints if hyperextended.



Exercising with harness

Bend your knees slightly and take up the slack in the Belt using your hand to rotate the flywheel and rewind some of the belt.

Now, accelerate the flywheel by starting the exercise at a lower intensity. Accelerate the flywheel at every repetition. After two to four repetitions you should have reached your desired training intensity.

Perform your training set, usually 6-12 repetitions at desired intensity.

Decelerate the flywheel on the way down and stop at the bottom. Slowly return to your start position and let the flywheel stop completely. Detach the Harness, step off the platform and prepare yourself for the next set. Make sure you get an adequate amount of rest between sets.

USING THE KBOX (cont.)

Using the Grip/Bar

Attach the desired Grip or Bar.

Position your feet as described above.

Use the Drive Belt Length Adjustment Button to set the top position for the actual exercise. As with the harness, for beginners and rehab patients doing upper body exercises, the top position should be just before all active joints are fully extended. For experienced users, there can be some slack in the top position to minimize strain on the belt and hook at the reversal point. Remember not to stop the movement in an extended position as this will put strain on your joints.



Put the flywheel in motion to roll up the belt. Accelerate the flywheel by starting the exercise at a lower intensity. Accelerate the flywheel at every repetition. After two to four repetitions, you should have reached your desired training intensity.

Perform your training set, usually 6-12 repetitions.

Decelerate and stop the flywheel on the way down. Don't put down the handle or grip before the flywheel(s) has come to a complete stop. Rest accordingly.

Selecting inertia

Inertia will dictate the speed and hence the type of resistance training you are doing. Low inertia will be higher in speed, lower in force and higher power vs higher inertia. For max strength slow, controlled movements with high force and low speed are warranted and hence more inertia.

The flywheel workout zones can be helpful, if you want to read more about this: <https://bit.ly/2NENUNE>



Warm-up - low intensity and low-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

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 hence easier to correct and less risk for injury or technical error. When technique is correct increase intensity and/or lower inertia for higher speed and more power.

SUPPORT

More info www.exxentric.com/support for downloading latest manuals, self-help instructions and tutorials.

<http://exxentric.com/maintenance/> for maintenance procedures or continue reading this in this manual, chapter 'MAINTENANCE'.

Blog posts covering flywheel science, physiology and practical applications with the kBox can be found at www.exxentric.com/news

You can find free material such as demos, getting-started tutorials, the kMeter intro course and some other info at www.exxentric-academy.thinkific.com. Register with your email for this free service.

Need assistance?

Contact support@exxentric.com and include the serial number found underneath the device along with a description of the encountered issue and preferably attach an image or video for visual illustration purposes.

KBOX MAINTENANCE

Drive Belt Cautions



The Drive Belt and its attachment to the axle is the most sensitive part of the kBox. 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.

For recommendations on how to prolong the lifespan of your Drive Belt, please refer to our belt wear tutorial on YouTube.

Video: <https://youtu.be/fPvslh-rFew>

Trimming worn Belt



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

- Unwind all of the belt from the shaft (left picture).
- Use the Locking Pin Removal Tool to push the Belt through the shaft and remove the Locking Pin.
- Cut off the damaged Belt. Harden edge with a lighter.
- Fold Belt around Locking Pin and pull the Belt and Pin into the wider groove in the shaft.
- The Belt automatically locks into the groove when you pull it firmly.

Video: <https://youtu.be/TQ6En9pQw4>



KBOX MAINTENANCE (cont.)

Replacing the Drive Belt



Remove the end of the Belt attached to the axle as described above, push the Belt Adjustment Lever and pull that end of the Belt through the opening in the platform. Follow these steps to complete the replacement:

1. Push out the pin holding the Drive Belt in the shaft using the Locking Pin Removal Tool provided in the toolbag.
2. Remove Belt from the shaft and Pulley. Make a knot on the Belt.
3. Flip kBox over. Take out all of the Belt from the Auto retract, disconnect and fix the hook on the short strand to the kBox so spring can't retract.
4. Remove the old Belt completely. Take a new Belt and attach it to the short strand and let it slide in gently into the Auto retract.
5. Take the free end through the holes in the chassis and the locking mechanism and make a knot. Flip kBox back.
6. Put Belt through Pulley and Shaft. Lock it in the shaft with the pin.

Video: <https://youtu.be/fkdpURmWK30>

KBOX MAINTENANCE (cont.)

Maintenance of screws



Maintenance of screws and nuts

The kBox center parts (shaft, bearings and flanges) are subjected to heavy and repeated forces. To keep everything working smoothly we have included a small toolkit for these key parts. Toolkit consists of one hexkey and one fixed wrench. Use those to regularly* tighten the screws and nuts underlined below. Tools for those not underlined are included for your convenience in case of small repairs needed.

Toolkit:

3 mm hexkey - flanges, shaft position screws and belt bite lever

13 mm wrench - for ball bearing nuts

Extra pin for locking drive belt in shaft

Pin removal tool



VIDEO: <https://youtu.be/7pkqJAuGQeM>

**) Once a month in professional settings (gyms, teams, clinics) and every third month for home users.*

****) Auto-retract casing not to be opened if not damaged or not working and after contact with Exxentric personnel and receiving instructions.*

kMeter

Overview	<p>kMeter Module allows you to connect your smartphone or tablet with your kBox and get training feedback. Earlier kBox models had a sensor built-in and kMeter module was connected through a 4-pin connector. kBox4 Pro and kBox4 Lite devices built since May 2018 have the next generation of kMeter module (kMeter II) built-in. kBox4 Active is prepared for kMeter II but it is optional. It can be ordered and assembled from factory or bought at a later time and installed by the user. Previous, wired, kMeter Module is powered with a standard 9 V battery and the kMeter II is using two AA batteries.</p>
SmartCoach	<p>kMeter module (wired) works with SmartCoach system but to connect SmartCoach to kMeter II you need a special version of kMeter II with a wire and this needs to be specified when you order your kBox or kMeter II.</p>
How it works	<p>kMeter Module sends wireless data over Bluetooth to the corresponding iOS or Android app. The kMeter App uses rotational data and user-input of inertia to calculate and present power in real-time and a set summary containing a wide range of metrics. Users can input training data after a completed set (exercise, comment and VAS 0-10 to be used for pain or exertion for example). All data can be stored in an in-app database for later view in the app or exported to Excel.</p> <p>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.</p>
Manual	<p>For info on how to connect and operate the kMeter module and app, see kMeter manual. For information about the metrics and their precision, check exxentric.com/kmeter-manual</p>
Download App	<p>“Exxentric kMeter” in AppStore or Google Play</p>

KBOX ACCESSORIES

Flywheel (0.010, 0.025, 0.050 and 0.070* kgm²)
kMeter II feedback system (if not built-in from factory)
kGrips (two single grips)
kBar (ultra light bar)
Foot block Short for Active and Lite
Foot block Long (for Pro)
Exxentric Ankle Cuff (two single pieces)
Exxentric Hip Belt
Exxentric Harness (XXS, XS, S, M, L, XL, XXL)
Exxentric Head Harness
Extension Strap for overhead movements
Spare Drive Belts
Exxentric Accessory Rack
Exxentric Flywheel bag

*0.070 kgm² flywheel is not compatible with the kBox4 Lite and the kBox4 Active

Accessories included with all kBoxes

Spare Drive Belt
Floor Attachment Kit
Flywheel Protective Casing
Angle Adjuster