

MANUAL FOR **881 E**



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Important

Read the manual carefully before using the cycle and save it for future use.

Monark Exercise AB

Monark has 100 years' experience of bicycle production. The Monark tradition has yielded know-how, experience, and a real feel for the product and quality. Since the early 1900s, Monark's cycles have been living proof of precision, reliability, strength and service. Those are the reasons why we are now the world leader in cycle ergometers and the market leader in Scandinavia in transport cycles.

We manufacture, develop and market ergometers and exercise bikes, transport bikes and specialized bicycles. Our largest customer groups are within health care, sports medicine, public authorities, industry and postal services.

For more information: <http://www.monarkexercise.se>



Product Information

Congratulations on your new Ergometer!

Monark Rehab Trainer 881 E is an arm and leg ergometer that provides the potential to individually adapt exercise at home or in the hospital, with continual following-up and adjustment of the exercise intensity. Ideal for exercise from a wheel chair.

NOTE!

Use of the product may involve considerable physical stress. It is therefore recommended that people who are not accustomed to cardiovascular exercise or who do not feel completely healthy, should consult a physician for advice.

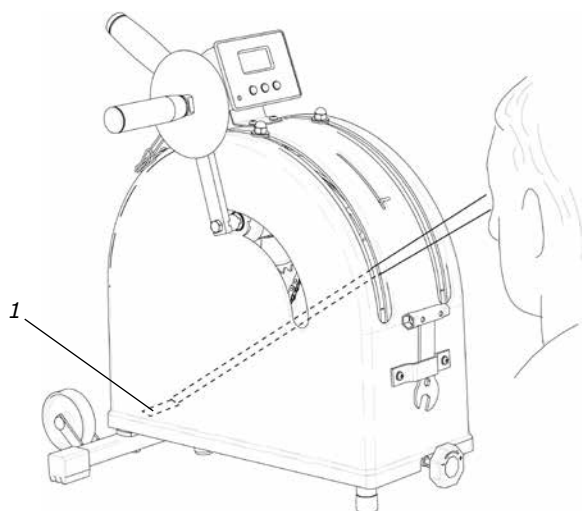


Fig: Serial number (1)

Facts

- Can be calibrated
- Graduated scale in watts, showing the work load at 50 rpm
- Electronic measurement of rpm / min, total rpm and time
- Adjustable crank arms (horizontally and vertically)
- Transport handle, adjustable vertically
- Powder painted
- Wheels for easy transport

Width

470 mm (18 ½")

Length

540 mm (18 ½")

Height

550 mm (21 2/3")

Weight

22 kg (48 ½ lbs)

Included

Pedals

Handles

Accessories

Wall bar table

Adjustable stand

Serial number

The serial number is placed according to Fig: *Serial number*.

Operating Instruction

Workload adjustment

Monark Rehab Trainer model 881 E is an arm and leg ergometer provided with a brake belt. The power can be read in watts at 50 pedal rpm. The Rehab Trainer is also equipped with an electronic meter that shows pedal revolutions per minute (RPM), total pedal revolutions (TOTAL COUNT) and time (TIME) function.

Through cycling the test person supplies the flywheel with a certain kinetic energy. This is braked by means of a brake belt which runs around the bigger part of the brake surface of the flywheel. The workload is changed either by using another pedalling speed or by increasing or decreasing the tension of the brake belt against the flywheel by means of the work load control knob.

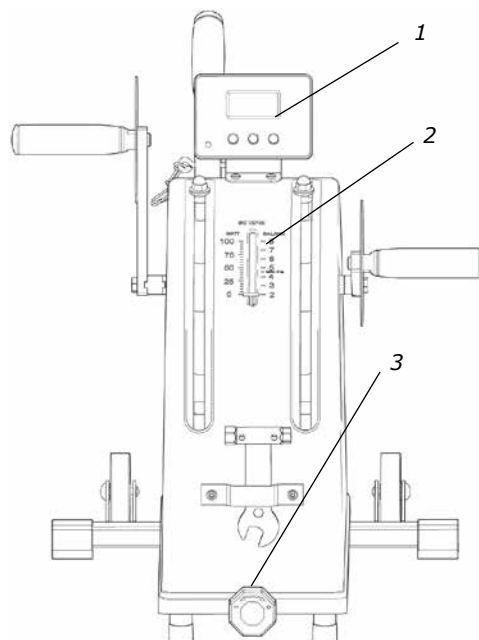
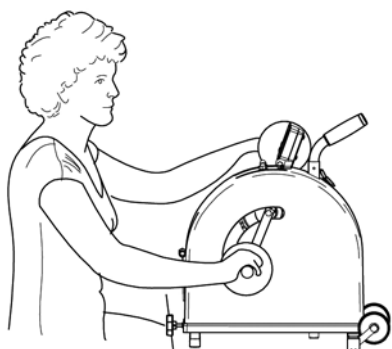
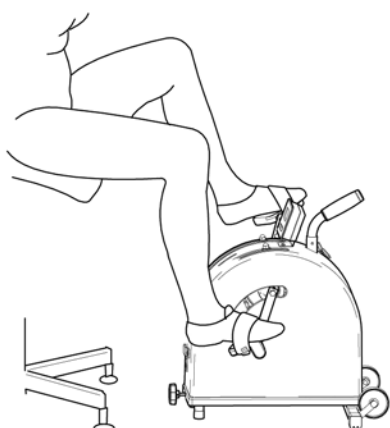


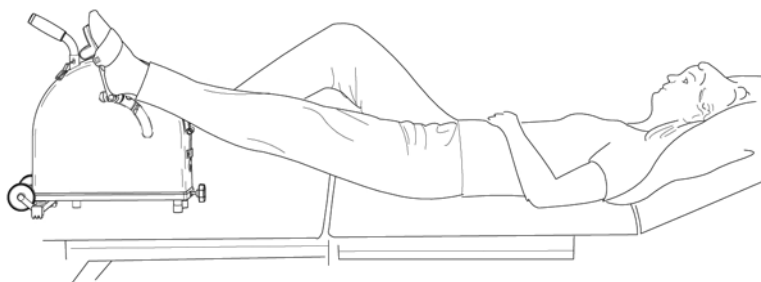
Fig: Workload adjustment
1) Electronic meter
2) Graduated scale
3) Workload knob



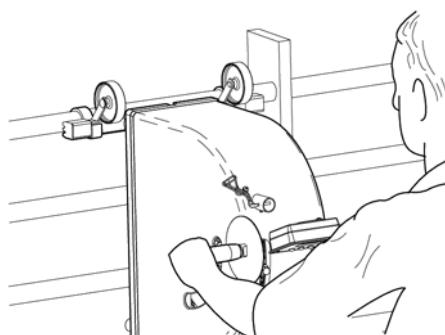
Arm exercise in a sitting position with the ergometer placed on a table.



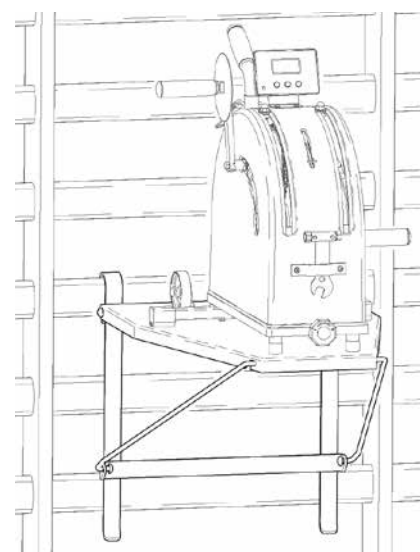
Leg exercise in a sitting position with the ergometer placed on the floor.



Leg exercise in a lying position at the same level as the ergometer.



Arm exercise with the ergometer hanging on the wall bars.

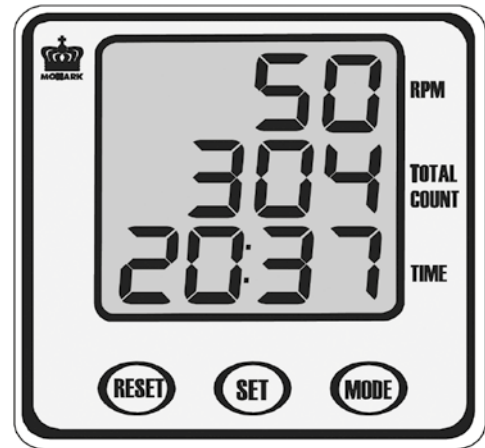
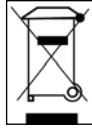


Ergometer placed on a table for wall bars.

Meter instructions

Display		
Pedal revolution (RPM)	0 - 250	rev./min.
TOTAL COUNT	9999	rev. total
TIME	0:00-99:59	min:sec

Batteries: 1.5 V x 2, R6 (AA)
Storing temperature: -10° C - +60° C
Operating temperature: 0° C - +50° C



KEYS AND FUNCTIONS

MODE key

Use the MODE key to cycle through the functions.

SET key

Pressing this key will make it possible to set TIME and TOTAL COUNT. If you hold down this key for two seconds you can advance the function value at a faster rate.

Programming exercise time:

Press MODE key to advance to TIME function, and use SET to enter your desired time. Each press of SET will advance time by one minute. When pedalling is started, measurement of remaining exercise time will begin and the unit will count down to 0 at which time beeper will sound for five seconds.

Programming TOTAL COUNT:

Press MODE key to advance to TOTAL COUNT function, and use SET to enter your desired value. Each press of the SET will increase the value by 10. When the pedals / handles are rotated the countdown of number of turns automatically start and count down to 0 and a beep will be heard for five seconds.

RESET key

The RESET key will clear the values for TIME and TOTAL COUNT individually.

NOTE!

1. Display will return to normal when not pressed any key for five seconds, or trainer is not used.
2. The meter starts automatically when a key is pushed, or if the bike is used and the meter gets an indication of pedal movement.
3. Auto shut off function when not pressed any key or device not used for four minutes.

Do not expose the meter to direct sunlight or extremely high temperature. Do not use any dissolvents when cleaning. Use only dry cloth.

Calibration

Calibration is done at the factory. If you for some reason want to check the calibration, do as follows:

Tighten the brake belt through turning the control knob so that pointer goes up to about 25-50 Watt at rotation of the crank. Place the bike on the edge of a table so that the calibration weight can hang freely, see *Fig: Calibration*. Loosen the screws for the clamping plate(3), so that the end of the belt is loose. Fasten a 2 kg weight (Art. No: 9000-212) to the brake belt. This weight should now be read on the scale at 2 kp. See *Fig: Watt scale*. Should there be a deviation between the position of the pointer and the 2 kp marked on the scale, adjust the loading spring by turning the adjusting screw (1) until the correct position is obtained, see *Fig: Calibration* and *Fig: Watt scale*. Turn clockwise if the pointer is placed too high and turn counter clockwise if the pointer is placed too low. Remove the weight and release the workload. Hold the brake belt in a position where the pointer can not go further down than to 0 on the scale and attach the brake strap screw and clamping plate.

The height level of the cranks is adjustable when loosen the nuts(5), see *Fig: Adjustments*. Set the crank arms at the desired position(7) and fasten with the nuts. If the cranks are not in line, adjust these. First set the left hand crank straight upwards. Then loosen the right hand crank by undoing the crank arm screw (6). Adjust the position of the right hand crank so it is in line with left hand crank and tighten the screw.

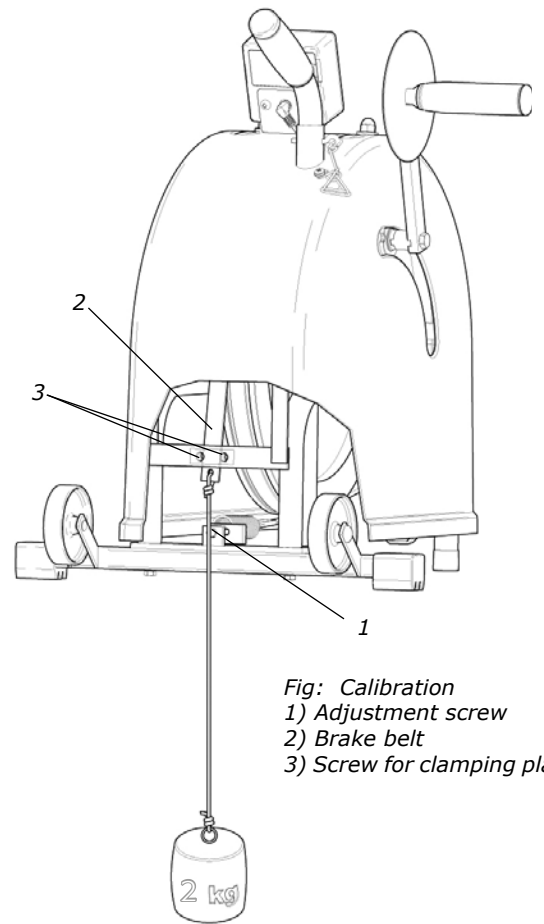


Fig: Calibration
 1) Adjustment screw
 2) Brake belt
 3) Screw for clamping plate

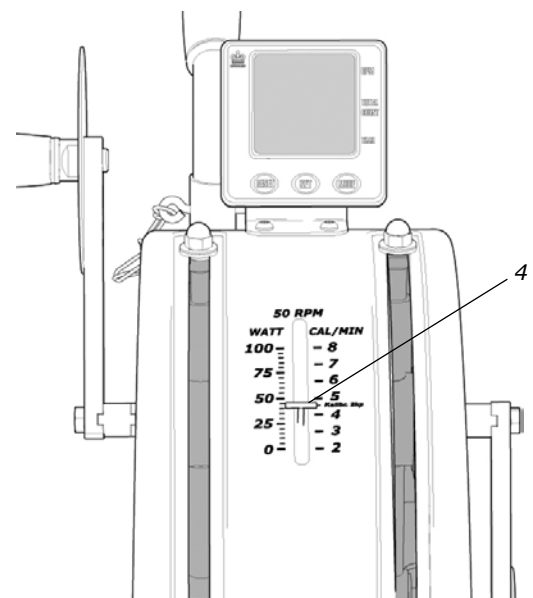


Fig: Watt scale
 4) 2 kp

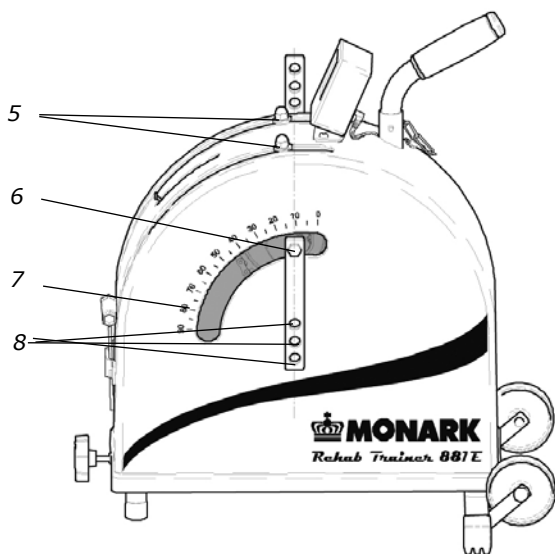
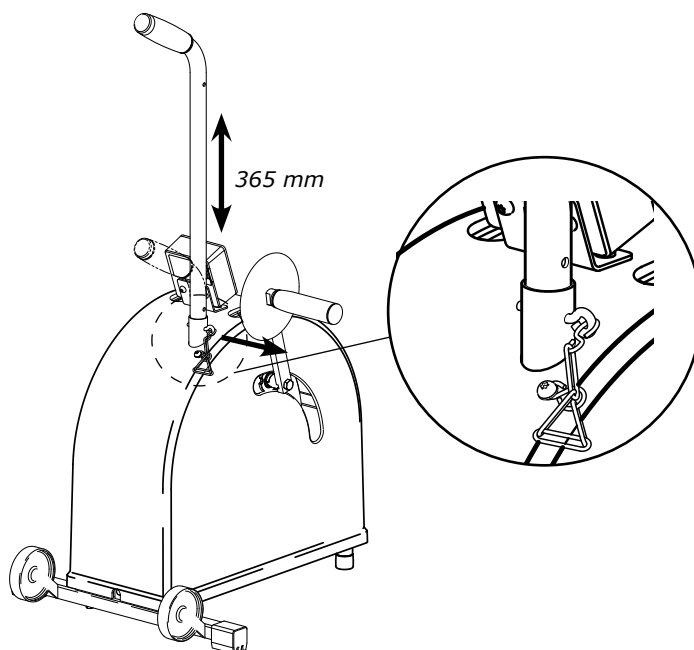


Fig: Adjustments
 5) Nuts
 6) Crank arm screw
 7) Graduated scale
 8) 3 different positions

Transportation handle

To make it easier to move the ergometer you can raise the handle. Then you can easily tilt the ergometer and push or pull it on its transportation wheels.

To raise the handle, pull out the sprint and pull up the handle (can be raised 365 mm). At the bottom of the handle there is a hole through the handle tube so that you can lock the handle in raised position with the sprint again.



Trouble shooting guide

Symptoms	Probable Cause / Corrective Action
There is a click noise with every revolution (increases with the weight)	The pedals/handles are not tightly drawn, tighten them or change pedals/handles.
no numbers are shown in the display	Check that the cable are properly connected at the back of the meter. Check the batteries.
Runs unevenly and the pointer moves irregularly (up and down)	Dirt on the brake belt and/or contact surface. See "Brake belt contact surface".

Service

Note that the text about service and maintenance is universal and that all parts may not be relevant to your bike.

NOTE!

Make sure the voltage indicated on the appliance corresponds to the local mains voltage before making connections.

Warranty

EU countries - Private use

If you are a consumer living in the EU you will have a minimum level of protection against defects in accordance with EC Directive 1999/44/EC. In short, the directive states for that your Monark Dealer will be liable for any defects, which existed at the time of delivery. In case of defects, you will be entitled to have the defect remedied within a reasonable time, free of charge, by repair or replacement.

EU countries - Professional use

Monark Exercise products and parts are guaranteed against defects in materials and workmanship for a period of one year from the initial date of purchase of the unit. In the event of a defect in material or workmanship during that period, Monark Exercise will repair or replace the product. Monark Exercise will not, however, refund costs for labour or shipping.

Other countries

Monark Exercise products and parts are guaranteed against defects in materials and workmanship for a period of one year from the initial date of purchase of the unit. In the event of a defect in material or workmanship during that period above, Monark Exercise will repair or replace (at its option) the product. Monark Exercise will as above for labour or shipping.

Service check and Maintenance

It is important to carry out a regular service on your ergometer, to ensure it is kept in good condition.

Service action:

- We recommend isopropyl alcohol to disinfect the surface of the bike. Use a damp but not wet cloth to clean the surface you wish to disinfect.
- Always keep the bike clean and well lubricated (once a week).
- Periodically wipe the surface with a rust preventative, especially when it has been cleaned and the surface is dry. This is done to protect the chrome and zinc parts as well as the painted parts (4 times per year).
- Check now and then that both pedals are firmly tightened. If not the threading in the pedal arms will be damaged. Also check that pedal arms are firmly tightened on the crank axle, tighten if necessary. When the Ergometer is new it is important to tighten the pedals after 5 hours of pedalling (4 times per year).
- Check that the pedal crank is secure to the crank axle (4 times per year).
- Be sure that the pedals are moving smoothly, and that the pedal axle is clear of dirt and fibres (4 times per year).
- When cleaning and lubricating be sure to check that all screws and nuts are properly tightened (twice a year).
- Check that the chain is snug and there is no play in the pedal crank (twice a year).
- Check that pedals, chain and freewheel sprocket are lubricated (twice a year).
- Be sure that the brake belt does not show significant signs of wear (twice a year).
- Check that the handlebars and seat adjustment screws are lubricated (2 times per year).
- Be sure that all moving parts, crank and flywheel are working normally and that no abnormal play or sound exists. I.e. play in bearings causes fast wearing and with that follows a highly reduced lifetime.
- Check that the flywheel is placed in the center and with plane rotation.

Batteries

If the meter is battery-operated, the batteries are in a separate package at delivery. If the storing time has been long the battery power can be too low to make the computer act correctly. Batteries must then be changed.

Flywheel bearing

The crank bearing is long term greased and requires no supplementary lubrication. If a problem arises, please contact your Monark dealer.

Crank bearing

The bearings in the flywheel are lifetime greased and require normally no maintenance. If a problem arises, please contact your Monark dealer.

Transportation

During transport the brake cord should be tightened to prevent it from falling off the flywheel.

Replacement of brake belt

To replace the brake belt remove covers if necessary. Make sure that the belt is loose.

Alt. 1: To loosen the brake belt on pendulum bikes with engine, connect power to the unit and raise the pendulum to 4 kp. Hold it there until brake belt is loose. Please note how the belt is assembled. Remove it from the bike. Attach the new brake belt and assemble the bike in reverse order.

Alt. 2: To loosen the brake cord on cycles with a weight basket set the basket to its upper position. Loosen the lock washer that is holding the cord and remove it from the tension center. Loosen or cut of the knot in the other end of the cord and then remove the hole cord from the bike. When assembling a new brake cord, first enter one end into the hole in the tension center, and tie a knot and let the knot fall into the bigger part of the hole. Lock the end of the cord with the lock washer.

Alt. 3: To loosen the brake belt on the bike remove all tension. Please note how the belt is assembled. Remove it from the bike. Attach the new brake belt and assemble the bike in reverse order.

NOTE!

When replacing the brake belt it is recommended to clean the brake surface. See "Brake belt contact surface".

Brake belt contact surface

Deposits of dirt on the brake belt and on the contact surface may cause the unit to operate unevenly and will also wear down the brake belt. The contact surface of the flywheel should be smoothed with fine sandpaper and any dust removed with a clean dry cloth.

Remove any potential covers and all workload on the brake belt and then remove it. Grind with a fine sand paper. Grinding is easier to perform if a second individual cautiously and carefully pedals the cycle.

Irregularities on the brake belt contact surface are removed by means of a fine sand paper or an abrasive cloth. Otherwise unnecessary wear on the brake belt may occur and the unit can become noisy.

Always keep the brake belt contact surface clean and dry. No lubricant should be used. We recommend replacing the brake belt when cleaning the contact surface. In regard to assembly and adjustment of the brake belt, see "Replacement of brake belt".

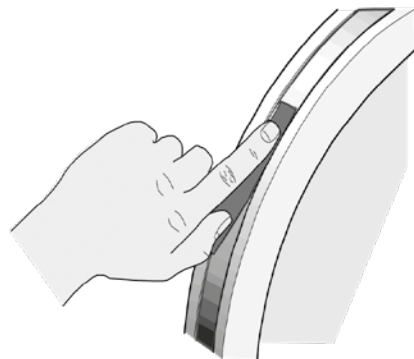


Fig: Brake belt

Chain 1/2" x 1/8"

Check the lubrication and tension of the chain at regular intervals. In the middle of its free length the chain should have a minimum play (3) of 10 mm (1/4 inch). See *Fig: Chain adjustments*. When the play in the chain is about 20 mm (3/4 inch) the chain must be tightened. Otherwise it will cause abnormal wear of the chain and sprockets. Therefore it is always recommended to keep the chain play as little as possible. Loosen the hub nut(2) on both sides and tense the chain with the chain adjuster(1) when needed.

When the chain has become so long that it can no longer be tightened with the chain adjusters it is worn out and shall be replaced with a new one.

To adjust or replace the chain, remove covers if required.

To adjust the chain the hub nuts (2) should be loosened. Loosening or tightening the nuts on the chain adjusters (1) will then move the hub and axle forward or backward. Then tighten the nuts on the hub axle again. See *Fig: Chain adjustments*.

To replace the chain, loosen the chain adjusters as much as possible. Dismantle the chain lock (6) and remove the chain. Use a pair of tongs for dismantling spring. Put on a new chain and assemble the chain lock. The spring of the chain lock should be assembled with the closed end in the movement direction(5) of the chain. Use a pair of tongs for dismantling and assembling the spring (4). See *Fig: Chain replacement*.

NOTE! At assembly the flywheel has to be parallel with the centerline of the frame. Otherwise the chain and sprockets makes a lot of noise and wears out rapidly.

Then assemble the removed parts as above but in reverse order.

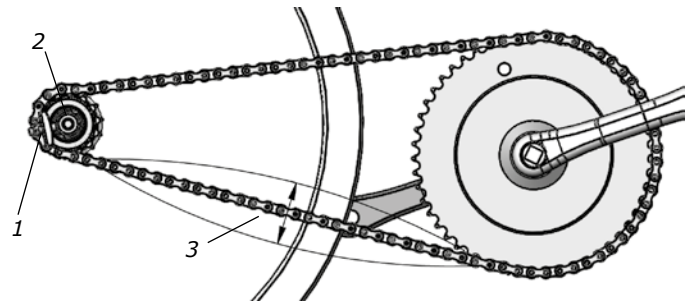


Fig: Chain adjustments
1) Chain adjuster
2) Axle nut
3) Chain play

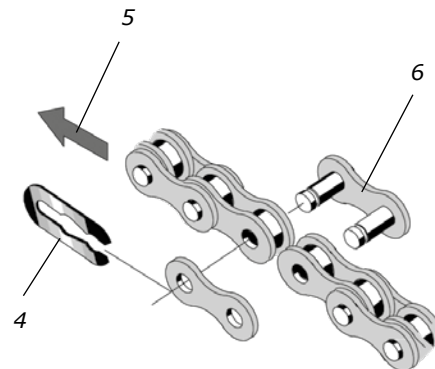


Fig: Chain replacement
4) Lock spring
5) Movement direction
6) Chain lock

Freewheel sprocket

When replacing the freewheel sprocket remove frame covers if necessary. Remove the chain according to section "Chain 1/2" x 1/8".

Loosen the axle nuts and lift off the flywheel. Remove the axle nut, washer, chain adjuster and spacer on the freewheel side. Replace sprocket-adapter and assemble the new parts in reverse order according to the above.

NOTE! Do not tighten the axle nut completely. It must be possible to loosen the adapter-sprocket half a turn.

The sprocket should be lubricated with a few drops of oil once a year. Tilt the cycle to make it easier for the oil to reach the bearing. See *Fig: Lubrication*.

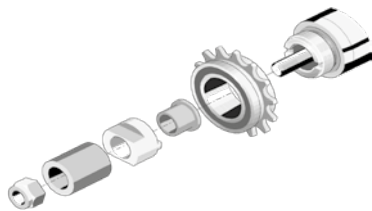
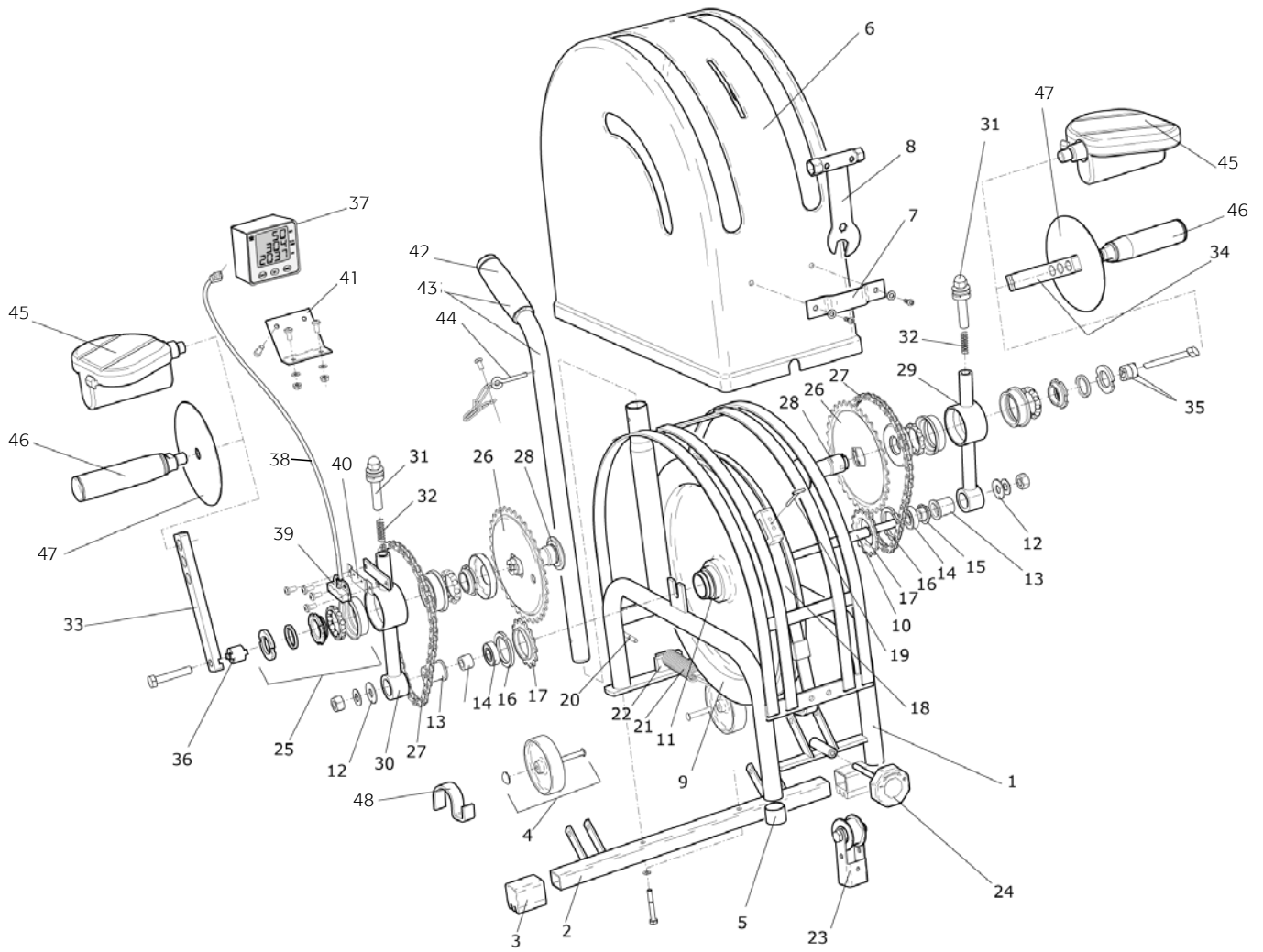


Fig: Hub assembly

Spare parts list



Pos.	Qty.	Art. No.	Description	Pos.	Qty.	Art. No.	Description
1	1	9145-2	Frame	28	2	9145-145	Crank axle
2	1	9030-6	Support tube, rear	29	1	9145-146	Crank bearing arm, right
3	2	9100-5	Plastic cap, blue	30	1	9145-147	Crank bearing arm, left
4	2	9010-12	Transport wheel, complete	31	2	9045-50	Arm extension fastener compl.
5	2	1066	Plastic cap, white	32	2	9145-49	Spring for above
6	1	9145-10	Cover with decals, complete	33	1	9145-60	Crank arm, left
	5	21015-5	Mounting screw for cover	34	1	9145-63	Crank arm, right
7	1	9145-18	Rubber belt	35	2	9045-65	Collar
8	1	9145-20	Combination key	36	1	9145-66	Double keyed collar
9	1	9145-24	Flywheel 11 kg, complete		1	9145-72	Meter, complete
10	1	9045-27	Axle length 160 mm 26g	37	1	9371-68	-Digital meter
11	1	9010-38	Tension Pin 5x18 mm	38	1	9326-263	-Extension cable
12	2	9145-50	Washer 10x25x1.5 mm	39	1	9326-162	-Crank sensor with cable
13	2	9145-28	Bearing bushing	40	1	9145-69	-Holder for sensor
14	2	19001-6	Ball bearing 6001-2z	41	1	9371-67	-Holder for digital meter
15	1	9000-15	Lock ring SgH 28		1	9326-164	-Magnet
16	2	2420-49	Sprocket nut	42	1	9145-75	Plastic handle
17	2	1210	Sprocket 14t	43	1	9145-100	Transport handle
18	1	9145-30	Brake belt, complete	44	1	9145-101	Locking pin with chain
19	1	9145-32	Indicator	45	1	9300-205	Pedal (pair)
20	2	9145-92	Plate		1	9300-207	Foot straps (pair)
21	1	9145-33	Spring	46	1	9045-70	Handle, pair
22	1	9145-34	Bracket	47	1	9045-71	Handcover
23	1	9145-136	Tension lever, complete	48	2	9045-101	Wall bar fastener
24	1	9145-140	Handwheel with tension axle, compl.		1	9145-550	Decal set for 881 E
25	1	6720	Crank bearing set, complete		1	9145-150	Set with screw, washer and nut
26	2	9007-36	Chain wheel, 34T		1	9145-8	Adjustable stand, accessory
27	2	9145-55	Chain 1/2 x 1/8", 42 l, incl. lock				



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