

PARAVAN®



movanimo touch movanimo touch plus

Operating manual



CE0633 



(English translation of the original user manual)

Valid for the following models
from 03/2014

Publisher and Copyright Holder:

Date of Publication:

Documentnumber:

Revision number:

movanimo touch (leg trainer), Art.-Nr. 8000

movanimo touch plus (arm trainer), Art.-Nr. 8200

PARAVAN medical GmbH, 72539 Pfronstetten-Aichelau

19.05.2014

movanimo_EN_Rev2.1

2.1

Dear customer,

Thank you very much for having chosen our movanimo. You will find all the important information and tips you need on your new movanimo in this User's Manual. Please carefully read the information on the page to follow in order to make sure your movanimo will give you many years of problem-free service. Keep this User's Manual in a handy place for later reference. Our user manual contains answers to questions relating to the operation and care of the movanimo and its fittings. If you should have any questions or suggestions on the movanimo, please do not hesitate to get in contact with us.

Your PARAVAN medical team

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1. Details on publisher

1.1 Your manufacturer

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Fig. 1: QR-Code

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Many mobile phones and PDAs contain an integrated camera and software that allows you to interpret QR codes so that you can read our contact information directly into the address book of your mobile phone or PDA

1.1.1 Copyright

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2. General Information

2.1 Information about the operating manual

Thank you for choosing movanimo. Please read the operating manual carefully before you begin using this device.

The employees at our house hope that you enjoy training on your new therapy device, and we wish you good health.

2.2 Symbols used in the operating manual

This user manual includes safety information which help the user to identify potential hazards and to avoid them. In the user manual potential hazards are highlighted by using three signal words:

- Danger
- Warning
- Caution

In addition, the signal word Note has been introduced for helpful information.

DANGER

Indicates an imminently hazardous situation which, if not avoided, may result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. This signal word may also be used to highlight unsafe practices or potential damage of the device or equipment.

NOTE

Indicates additional helpful information.

2.3 Illustrations in the operating manual

Potential hazards, mandatory actions, prohibitions, and user actions are illustrated using the same symbol shapes throughout all instructions for use.



Fig. 2: Symbol for hazard alert

Hazard alert

An equilateral triangle is used to convey hazard alert messages, regardless of their hazard level. Hazard level is conveyed by use of the appropriate signal word as described in chapter 2.2.



Fig. 3: Symbol for prohibition

Prohibition

A circular band with a 45° diagonal slash from upper left to lower right is used to indicate prohibition.

User actions

➔ A bullet at the beginning of a sentence indicates a required user action.

2.4 Illustrations in User manual

Please be aware that the appearance of the product and display screen may differ slightly from the illustrations used here.

2.5 Technical changes

The manufacturer reserves the right to make changes to the product, the technical data, the software or the assembly- and operating manual without prior notice.

NOTE

The operating manual must remain accessible to the user at all times and stored for usage at a later point in time.

3. Proper usage

The motorized therapy device movanimo is used to therapeutically exercise arms and legs. It has been designed for patients with limited movement due to a neurological or neuromuscular disease.

movanimo can be used for the following forms of exercise therapy:

- **Passive movement therapy:** The motor moves arms or legs.
- **Active movement therapy:** The patient moves arms or legs with own muscle strength.
- **Active movement therapy with motor support (softtraining):** The patient actively moves arms or legs with own muscle strength while the motor provides targeted support.

movanimo can be used as an arm- or leg trainer. It is not possible to use the arm- and leg trainer at the same time.

3.1 Fields of use

Use movanimo touch as:

- leg exerciser (movanimo touch)
- upper body exerciser (movanimo touch plus)

The use of the exerciser is especially recommended for:

The use of „movanimo touch“ is suitable for the following fields of use

- paralysis or neuromuscular diseases with reduced arm and leg mobility, e.g. after paraplegia, multiple sclerosis, muscular dystrophy, parkinson´s disease, brains damages or neuromuscular diseases with comparable damage pictures,
- cardiovascular diseases
- metabolic diseases
- rheumatic diseases
- vascular disorders
- physical inactivity

3.2 Side effects and contraindications

3.2.1 Side effects

- The extent and duration of the therapy should be coordinated with your physician, therapist or physical therapist in order to avoid overextension or adverse side effects.
- Risks occur when the patient is strained beyond his or her personal limits and capacity.
- Undesired side effects, such as muscle-/joint pain, too severe muscle tone reduction and skin injuries may occur in rare cases.

3.2.2 Contraindications

The motor-supported movement therapy is essentially a gentle therapy form. There are, however, conditions under which this therapy form should not be practiced. These contraindications include:

- Severe pain when performing movements
- Diseases or injuries that require immobilization, as e.g. a recent bone fracture
- Acute compression (pressure damage) of a nerve
- Infections with fever
- Brittle bones
- Unstable circulation
- In cases of cardiac insufficiency or poor circulation, you should consult a doctor before training. In this case you should only train with the exerciser under adult supervision.

3.3 Important instructions for the training

- Please discuss the applicability of the movanimo movement therapy as well as a suitable therapy form, duration and all appropriate device settings with your specialist physician or physical therapist.
- The therapy device is designed for people with a body weight of up to 130 kg. When properly used, the arm trainer is not burdened by more than 15 kg on each side and the leg trainer by not more than 25 kg on each side.
- The device can only be properly used with approved PARAVAN medical GmbH accessories.

NOTE

- ➔ The movanimo movement trainer is exclusively suited for therapeutic purposes and the intended use includes the treatment as a medical device.
- ➔ The device is not suitable for the following medical purposes: diagnostics, monitoring and measurement.

3.4 Minimum requirements for training

- The user must have been given instruction by authorized and skilled personnel for safe handling of the device
- User can sit upright
- User is only allowed to train without supervision, if he is able to operate the device independently.

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4. Disclaimer of liability

PARAVAN medical GmbH is not responsible or liable in any way for losses, damages or costs resulting from or associated with

- Faulty installation, repair or maintenance by persons who are not authorized by PARAVAN medical GmbH
- Usage of accessories that have not been cleared by PARAVAN medical GmbH
- Improper or wrong usage
- Usage without consulting a specialist physician or therapist
- Non-compliance with the operating manual
- Gross negligence

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5. Therapy with movanimo

5.1 Therapy forms

The following therapy forms are possible with movanimo:

Passive movement with motor power

The limbs are moved by motor power only. The acceleration and stopping of the pedals is gentle and consistent. The full rotational speed is reached after a minimum of 10 seconds. The maximum rotational speed in passive training is 60 rpm.

Active movement with own muscle strength

This movement type is performed with more or less active muscle movement. Two forms are available.

Soft training: Active movement with passive motor support

Your active movements are supported by passive motor power.

Active movement against motor resistance

Your muscles must work against resistance, and this promotes muscle growth. The resistance can be adjusted to 20 settings, basically comparable to a gear shift on a bicycle. The higher the gear, the harder the pedaling is. This function specifically trains your muscles.

The device can be operated forwards or backwards. An automatic rotational change can also be configured with the rotational direction automatic.

5.2 Anti-spastic control and –relaxation

movanimo is equipped with anti-spastic control, which, in case of an identified spasm, stops the training and restarts it after a short pause. It can be configured whether the pedals should continue to turn forwards or backwards or in the opposite direction when a spasm is recognized. By default movanimo runs in the opposite direction when it identifies a spasm. The spasm-relaxation program relaxes cramps and loosens the muscles. The sensitivity for the spastic control can be adjusted to six settings according to your individual needs.

6. Safety instructions

Please read the following safety instructions carefully. Inaccurate compliance or non-compliance with these instructions may endanger the patient, the operator or auxiliary personnel.

- ➔ Please read user manual carefully.
- ➔ Always ensure that no children or animals are in the vicinity of the moving pedals (pinch point hazard).
- ➔ It is not allowed to use accessories that are approved by PARAVAN medical GmbH. You may only use accessories and connect devices to the USB interface and jack outlet that have been approved by PARAVAN medical GmbH
- ➔ The device is equipped with an external power supply (AHM 150 PS24C2). The device may only be put into operation with the supplied power supply and plug connection. Please ensure that power supply and electrical cables are in proper condition.
- ➔ Only the manufacturer or authorized personnel may open the device.
- ➔ The power plug must be disconnected before opening the casing.
- ➔ Additions, new installations, changes or repairs may only be performed by authorized personnel.

- ➔ In case of damages, unusual sounds or burnt smells, immediately pull the power plug on the device and contact an authorized service technician.
- ➔ The device must be used according to the instruction manual. Especially the permissible operating conditions must be observed (see Chapter 18.4).
- ➔ Do not place any liquids on or in the vicinity of the device.
- ➔ Children may only train on the movanimo device under constant supervision.
- ➔ Always wear appropriate shoes without shoelaces when using the leg trainer. Danger of injuries by pinched shoelaces
- ➔ The device may only be operated when both foot cuffs are attached.
- ➔ Do not leave the device in direct sunlight, in front of radiators or other heat sources as this will heat up the surface of the casing, which can be dangerous.

- ➔ Place the device on a flat surface, ensuring that all five pedestal feet are securely positioned on the ground. If the device is set up on a carpet, make sure the carpet does not slip.
- ➔ Ensure that the ventilation outlet of the lower pipe remains open.
- ➔ It is possible that maintenance products for carpets, hardwood flooring or tiles contain substances that may attack and soften the plastic caps of the therapy device's pedestal feet. This can lead to residue on the floor. The manufacturer PARAVAN medical GmbH is not liable for such damages.
- ➔ Do not use solvent-containing, caustic or harsh cleaners.
- ➔ Prevent fluid entry into the device or touch panel.
- ➔ Ensure that user can not reach into moving parts, such as foot shells, arm cranks or protection disc.
- ➔ Ensure that footshells and arm cranks can rotate freely.
- ➔ Ensure that locking bolt for height adjustment is securely engaged and tightened.
- ➔ Ensure that wing bolt for adjusting the pedal radius is tightened securely.
- ➔ Ensure that white locking bolt for adjusting pedal width is securely engaged and tightened.

- ➔ Your seat, just as for a wheel chair, chair or the like, must be positioned so it does not tilt or slip on the floor. A tilt protection for wheelchairs can be ordered as an accessory.
- ➔ The therapy device is designed to be used while sitting; do not step into the foot cuffs with your entire bodyweight, and do not hang from the arm trainer
- ➔ Before you begin your therapy with the leg trainer, make sure your legs and arms are fastened securely.
- ➔ When using the arm trainer, your feet may not be fastened to the foot cuffs.
- ➔ Make sure your seat is positioned properly in relation to the device. Avoid overstretching your joints (see chapter 9.1).
- ➔ Please do not smoke during the training



WARNING

Danger of injuries due to lack of independance

- Please verify with your dealer or physician if the presence of an attendant is required for a safe training.
- If the user cannot operate the device safely without assistance make sure that the user exercises with a trained attendant who is able to stop the device at any time.



WARNING

Danger of injuries due to physical impairment

- Please immediately contact a physician if you are experiencing pain or discomfort as a result of training with movanimo.



DANGER

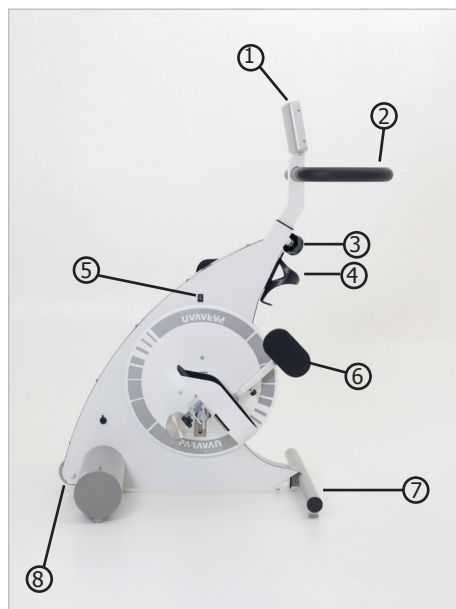
Danger to life due to cardiac pacemaker

- If using a cardiac pacemaker consult a doctor before the first training session and discuss the potential complications.
- Be aware of potential electromagnetic emissions and contact a trained dealer.

	WARNING
Danger of injuries due to inappropriate preparation	
• Always inspect the device before use to ensure that the equipment, especially the plug, the power supply and the cable, are not damaged. • Disinfect movanimo before every training. • Make sure that cranks can move freely.	

7. Device overview

7.1 Device overview leg trainer (movanimo touch)



- Touchpanel (controls) ①
- Handle bar ②
- Locking screw height adjustment ③
- Cup holder ④
- Power switch (on/off) ⑤
- Footshells ⑥
- Pedestal foot ⑦
- Transportation roll ⑧

Fig. 4: movanimo touch

7.2 Device overview arm trainer (movanimo touch plus)

- Handle bar legtrainer
- Locking screw Swivel arm
- Handholds armtrainer

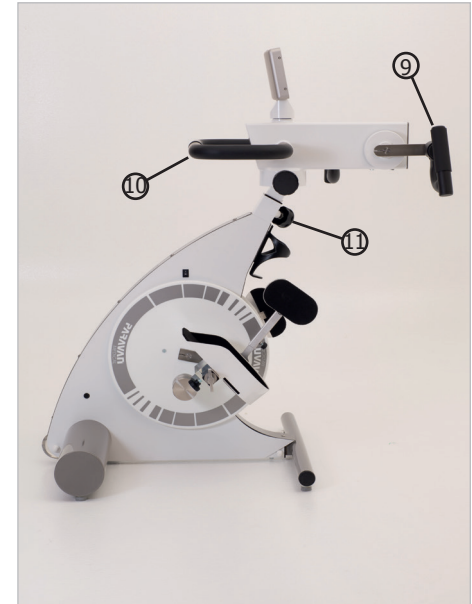


Fig. 5: movanimo touch plus

7.3 Detailed view touch panel



- USB interface ⑫
- Jack outlet (POLAR receiver)⑬

Fig. 6: Touch panel

7.4 Accessories

7.4.1 Lower leg restraint (article no. 7450)

The height-adjustable lower leg restraints ensure additional stabilization and guidance of the lower leg during training and prevent the legs from bending sideways.



Fig. 7: Lower leg restraints

7.4.2 RTR tilt protection (article no. 7700)

The RTR tilt protection consists of two rubber wheels that latch on to the pedestal foot of the movement trainer and hook onto the wheelchair from where it can be controlled.

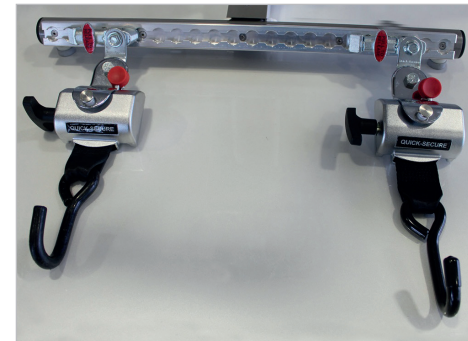


Fig. 8: RTR tilt protection

7.4.3 movanimo cardio set (article no. 8500)

The movanimo cardio set allows you to monitor and display your heart rate during training. The set consists of a training belt (sender) and a receiver, which is inserted into the jack outlet on the top side of the touch panel. We use Polar technology for this accessory. The activation is described in Chapter 8.10.

7.5 Article number and -designation

Article no.	Designation
8000	movanimo touch
8200	movanimo touch plus
8450	Armtrainer upgrade kit
8500	movanimo cardio set for heart rate monitoring
8601	Handfix Size 2 (men)
8602	Handfix Size 1 (ladies)
8603	Handfix Size 0 (children)
7450	Lower leg restraint
7700	Tilt protection "RTR"
7300	Functional electric stimulation (manufacturer BerkelBike)

Please only use accessory parts that have been approved by PARAVAN medical GmbH, otherwise PARAVAN medical GmbH cannot unconditionally guarantee the application safety of the device. Warranty- and liability claims also become invalid if unapproved parts are used.

7.6 Symbols on the product

The following signs are applied to the device:

Symbol	Meaning
	Application part Type BF All parts that come into contact with the patient during proper usage are considered to be application parts (e.g. footshells, handlebar, leg guidance, touch panel).
	Please follow the operating manual.
	Ecologically responsible disposal as described in Chapter 17.2
	The device conforms to the guideline for medical products 93/42 EEC (notified body: Berlin Cert GmbH).
	Manufacturer
	Manufacturer date (year in four digits)

	Protect device against wetness and rain
	device of protection class II
	Serial number of device
	Do not lean against device „movanimo touch“. Do not lean against upper torso exerciser. Do not lean against handle bars. Danger through slipping away of device.
	Do not stand on device, e.g. footshells, floor stand, cover or tubes.
	Risk through moving parts. Don't touch protection disc during running operation. Don't reach into arm cranks during running operation. Don't reach into footshells during running operation.
	Don't sit on handlebar or exerciser. Don't lean at exerciser.

8. Activation, operation and transport

8.1 Inspection before activation

- ➔ Please remove the packaging material and transport safety devices before activation.
- ➔ Check the contents for completeness and damages that may have occurred during transport.
- ➔ Please notify your delivery service immediately in case of incomplete contents or existing damages.

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8.2 Activation of leg trainer

Your device is equipped with an external power supply (AHM 150 PS24C2).

- ➔ Please insert the plug of the power supply cable in the corresponding socket on the back of the device.
- ➔ Use the power cord to connect the power supply connection to the power supply socket.
- ➔ Control the cables for a secure fit.
- ➔ Turn the device on with the power switch.
- ➔ The screen will turn on automatically and display the main menu (see Chapter 10).



Fig. 9: External power supply and socket



Fig. 10: Power switch

8.3 Standby mode

The display has a standby mode. In standby mode the screen is dark.

- ➔ Standby mode is activated by pressing down on the display at any place for ca. 5 seconds.
- ➔ To switch from standby mode to operational readiness, press the display again at any location for ca. 5 seconds until the main menu appears.

8.4 Adjusting the pedal width

- ➔ Before modifying the pedal width please switch off the device.
- ➔ The device has two foot cuffs, which can be adjusted in the horizontal width by opening the white locking bolt (quick-adjust setting).
- ➔ You can select 4 positions on each side of the pedal.
- ➔ In order to adjust the pedal width unscrew the white stop bolt lock under the foot cuff and pull out locking pin till you can move the foot cuff.
- ➔ Move foot cuff to the desired position till locking pin snaps in on pedal arm.
- ➔ Make sure that the same pedal width is set on both sides; otherwise the device may run unevenly.
- ➔ Please be sure to tighten the white locking bolt securely again when the foot cuff is in the desired position.

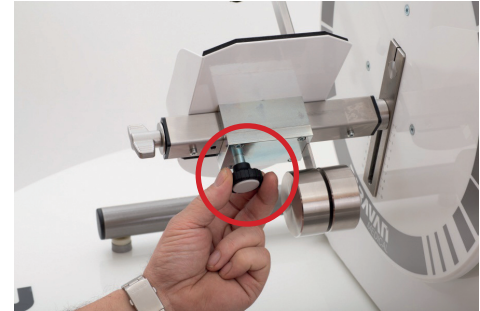


Fig. 11: Foot cuffs with quick-adjust setting (white stop bolt lock)



WARNING

Danger of injuries due to loose foot cuffs

- Ensure that white stop bolt lock is always tightened securely.

8.5 Adjusting the pedal radius

- ➔ Before modifying the pedal width please switch off the device.
- ➔ The pedal radius is adjusted by opening the quick-adjust lock (wing screw) at the front of the pedal axis.
- ➔ Unscrew wing screw and move foot shell with both hands to the desired position. Then re-tighten wing screw securely.
- ➔ The radius can be adjusted smoothly on a scale of 1 to 10 cm. The larger the pedal radius, the more energy must be exerted to complete a pedal rotation.
- ➔ Your knee joints should always be slightly bent to avoid straining your joints. If necessary, correct the distance to the device or the pedal radius.
- ➔ When starting to train use a smaller pedal radius.



Fig. 12: Adjusting the pedal radius (wing screw)

HINWEIS

- ➔ Make sure that the pedal radius is the same on both sides, otherwise the pedals may rotate unevenly.



WARNING

Danger of injuries due to loose pedal arm

- Ensure the pedal arm is fastened securely again after the adjustment.
- Ensure that wing screw is tightened securely every time before training.

8.6 Adjusting the handhold height

- ➔ Disengage the quick-release lever to adjust the handhold or armtrainer height. Unscrew lever till you can remove stop bolt lock.
- ➔ Now you can lower or raise the handlebar or armtrainer. You can adjust 6 height positions.
- ➔ Please make sure that stop bolt lock snaps in securely.
- ➔ The red safety pin indicates if locking bolt is snapped in.
- ➔ Red safety pin must not protrude out of its guide if locking bolt is snapped in.
- ➔ When you are done, fasten the height adjustment again with the lever securely.
- ➔ Please always check the tightness of the lever before you start to train.
- ➔ When setting the handhold height, ensure that the handholds do not collide with your legs during movement.

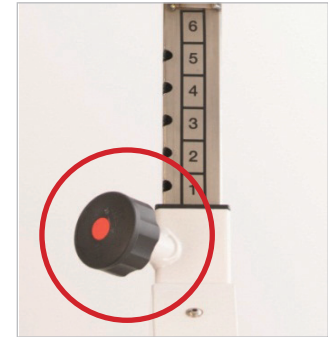


Fig. 13: Quick release lever for height adjustment (stop bolt lock with red safety pin)



WARNING

Risk of injuries due to height adjustment

- Please make sure that locking bolt always snapped in entirely.
- The red safety pin indicates if locking bolt is snapped in.
- Red safety pin must not protrude out of its guide if locking bolt is snapped in.
- Before training always make sure that locking bolt is fastened securely and the lever is securely screwed.

8.7 Lower leg restraint (accessory, article number 7450)

You can support your legs with the lower leg restraint (calf cuffs) in order to securely guide your legs during movement. We recommend inserting a lower leg restraint if your legs tend to press together or tilt to the inside or outside.

- ➔ After your feet have been placed in the pedals, insert the metal fastening rod into the cradle. Ensure that it is attached as high as possible, i.e. not more than a hand width below your knee joint. For this purpose loosen the set screw and adjust the calf cuff to the desired height.
- ➔ Now place the Velcro tape around your leg and fasten it to the calf cuff. Ensure that the Velcro tape is not too tight so as not to impede blood circulation.



Fig. 14: Adjusting the lower leg restraint

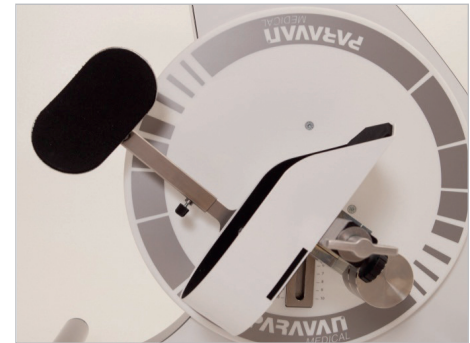


Fig. 15: Fixed lower leg restraint



WARNUNG

Risk of injuries due to lack of independance of user

- Patients who are incapable of removing the lower leg restraint themselves are not permitted to train without supervision.

8.8 Adjusting the pedestal foot

Movanimmo is equipped with an extendible pedestal foot. When movanimmo is used as an arm trainer (device version movanimmo touch plus), the center of gravity is higher than when it is used as a leg trainer. Therefore, the pedestal foot is extended from the device body to its maximum length to provide additional stability when the arm trainer is used. Open both cylinder head screws at the pedestal foot with the supplied Allen key and pull out the pedestal foot to its maximum length until you can again insert the screws in the designated screw holes.

8.9 Activation of the arm trainer movanimo touch plus

Before using the armtrainer please pull out the pedestal foot, as described in Chapter 8.8, to the maximum length in order to ensure the stability of the device.

You can either use movanimo touch plus as legtrainer or as upper body trainer.

- ➔ If you use movanimo as armtrainer, please open the two locking screws and swivel the device by 180 degrees.
- ➔ After rotating the upper device please tighten the two locking screws securely.
- ➔ You can now activate the arm trainer with the touch panel (see Chapter 9.4.2).

NOTE

It is not possible to operate the arm- and leg trainer at the same time. When using the arm trainer, the feet must not be fixated in the foot cuffs.

	DANGER!
Danger of injuries	
Do not put feet into foot rests during upper body training.	



Fig. 16: Locking screw adjustable arm



Fig. 17: Using movanimo touch as legtrainer



Fig. 18: Using movanimo touch plus as upper body trainer

8.10 Adjusting the movanimo cardio set (article no. 8500)

- ➔ Insert the heart rate receiver into the jack on the top of the touch panel in order to use the movanimo cardio set.
- ➔ The logo, which is attached to the receiver, must point in your direction.
- ➔ Place the chest strap around your chest. The strap can be easily put on or taken off and fastened with a hook.

The length of the belt is adjustable from size M-XXL. The maximum circumference is ca. 90 cm.

- ➔ During training, the sender, which is attached to the belt, must point in the direction of the heart rate monitor.
- ➔ When the chest strap has been put on correctly and the receiver is plugged in, movanimo touch will display your heart rate during training (see Chapter 10.4.3)



Fig. 19: Heart rate receiver



Fig. 20: Chest strap heart rate



CAUTION

Danger of material damage due to inappropriate handling

- Do not fold cardio-pulse-set.
- Do not leave cardio-pulse-set in direct sunlight for longer periods of time

8.11 Transport

- ➔ Before moving the device, ensure that it is turned off and that the power plug has been disconnected.
- ➔ Please remove the external power supply from the device before moving the device.
- ➔ Tilt the device carefully towards you until you are able to move the device over the rolls.
- ➔ Always hold the device securely with both hands on the handlebar during transportation.
- ➔ You can move the leg trainer on its wheels to the desired location.
- ➔ If it is not possible to move the leg trainer in this fashion, you can carry it with at least two people by lifting from the underside of the frame.



Fig. 21: Transportation of movanimo

- ➔ The wheels are not suitable for transporting the device over long distances or uneven ground.
- ➔ Please carry the device with two people if it is to be transported over stairs.



WARNING

Risk of injury due to incorrect transport

- Please carry the device with two people if it is to be transported over stairs.
- Transport device exclusively on even and stable floors
- Before moving the device, ensure that it is turned off and that the external power supply has been removed entirely.

9. Proper usage of the movanimo

9.1 Secure sitting- and body position

The right sitting position is especially important for therapy success. Please observe the following recommendations:

- ➔ If you are operating the device from a wheelchair, ensure that the wheelchair is fastened securely and that you are using a suitable wheelchair. The wheelchair should not tilt backwards. We recommend using the tilt protection RTR Protect (article no. 7700) or the tilt protection protect (article no. 7500), especially if spasms occur during training.
- ➔ If you are operating the device from a chair, make sure that the chair is stable, has a straight and high back rest and cannot tilt backwards. Do not use a chair with wheels (e.g. office chair).
- ➔ Sit straight and in a central position. The wheelchair or chair must be placed centrally to the device.

Please further observe the following indications when using the leg trainer.

- ➔ Ensure a proper distance from your wheelchair or chair to the device. Your legs should be slightly angled and not stretched in order to prevent injuries to joints, muscles and tendons. If you are just starting out, choose a somewhat shorter distance to the machine.
- ➔ Set the right handhold height according to your body size. The arms must not be stretched, and the knees should not collide with the handholds during movement.
- ➔ Make sure that your feet are securely fastened in the foot cuffs with the Velcro straps.
- ➔ If you suffer from signs of paralysis, we recommend using the lower leg restraint (see Chapter 8.9).

Please observe the following indications when using the arm trainer:

- ➔ The legs must not be fastened to the foot cuffs.
- ➔ Set the correct height and width and ensure that your elbow joints are not extended too far (see Chapter 8.9).
- ➔ Set the correct width for the pedestal foot.
- ➔ If your arm muscles are weak or partially paralyzed, we recommend using arm cuffs with restraints (article no. 7110).



WARNING

Danger of injuries due to wrong sitting position

- Let your physician or therapist show you the correct sitting position before training for the first time.

9.2 General training recommendations

Training with the movanimo movement trainer has a positive effect on both body and mind. Regular training can contribute to muscle build-up, loosening of joints, circulation improvement and digestive stimulation. movanimo can be used to prevent lack of movement as well as for therapeutic purposes. A suitable training plan that has been customized to your individual requirements is important for the success of your training.



WARNING

Danger of injuries due to excessive training

- Coordinate your individual training plan with your physician or therapist in order to attain the desired training results.

The following recommendations are valid for proper training:

- ➔ Adjust the training sessions to your physical abilities and health conditions.
- ➔ It is better to perform more and shorter training sessions than long training sessions in which you physically exert yourself too much.
- ➔ If possible, plan your training sessions at fixed times in your daily schedule. Regular training will more likely lead to the desired training results than sporadic training.
- ➔ Start your training sessions in passive training to loosen the joints and relax spasms.
- ➔ At training begin, select a lower speed of rotation and pedaling resistance. When in doubt, set a somewhat shorter pedal radius.
- ➔ If you are unsure, select the training step „Easy“ from the training programs under the menu Indication-guided training.

The training should be fun and keep you motivated for the long term. The first positive effects are usually noticeable after 4 to 6 weeks of daily training.

A training is successful when your muscles become more relaxed and the motor exerts less power than previously to rotate the pedals without stopping. You can slowly adapt your training, depending on your physical condition and progress.

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10. Operating the touch panel

10.1 Operating the touch panel

The touch panel has a high-quality 7.5-inch display. All functions are triggered by touching the appropriate numerical buttons with your fingertips. The display is configured so that it only reacts to slight pressure in order to avoid accidental operation. Use e.g. your index finger, middle finger or thumb to operate the display.

10.2 Main menu

You can choose from the following program items:

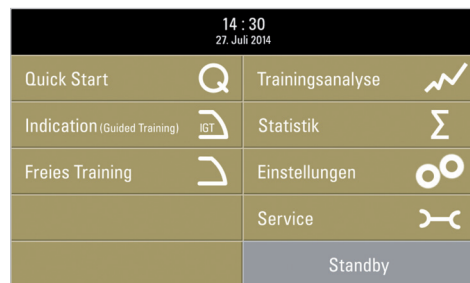


Fig. 22: Main menu

- **Quick start:** This button will immediately begin your training with an already preset standard training.
- **Indication-guided training:** With this button you can access a selection of preset trainings for various symptoms.
- **Free training:** With this button you can access a selection of further trainings without presets.

- **Training analysis:** Use this button to display your current training evaluation after completing a training. Press the Arrow buttons to display the last 10 completed trainings.
- **Statistics:** Statistics will show you an evaluation of all completed trainings in the long-term display (added and average values).
- **Settings:** With this button you can access the settings menu in which you can change the default training parameters.
- **Service:** The service functions are secured by a 4-digit code and only accessible to a service technician. E.g. software updates are entered in the service menu.
- **Standby:** This button puts the machine in standby mode. It must be pressed for 5 seconds in order to avoid accidental operation. The screen will dim as soon as the device enters standby mode. Press the touch panel at any location for ca. 5 seconds to awaken the device again.

10.3 Most important button functions

10.3.1 Plus- /Minus buttons

With these buttons you can gradually increase or decrease values, such as e.g. resistance, RPM, date etc.

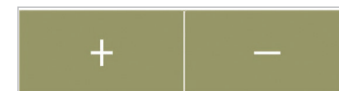


Fig. 23: Plus- /Minus-buttons

10.3.2 Horizontal Arrow button

Use these buttons to switch between several setting fields in the menu Settings.



Fig. 24: Horizontal Arrow button

10.3.3 Home button

With this button you can access the main menu. It is deactivated for the currently active training.



Fig. 25: Home button

10.3.4 Back button

With this button you can navigate back to your previous setting.



Fig. 26: Back button

10.3.5 Confirm and Decline buttons

You confirm a menu selection by pressing this button.



Fig. 28: Confirm buttons

You decline a menu selection by pressing this button.



Fig. 27: Decline buttons

10.3.6 Start and Stop buttons

Your training starts when you press this button.

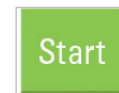


Fig. 29: Start button

The Start button will begin your training. The machine starts out gently and slowly increases its rotational speed until it reaches the preset value. The full rotational speed is reached after a minimum of 10 seconds. The maximum rotational speed in passive training is 60 RPM.

You stop your training program by pressing this button.

This gently reduces the rotational speed until it stops. Press the Start button again if you wish to continue your training. Press the Home button if you wish to exit the training program entirely. You will be automatically get tot he training analysis.



Fig. 30: Stop button

10.4 Training menu

The training screen is displayed when a training program is prompted:

The training screen is divided as follows:

- Top control field (1-3)
- Lower control field (Buttons 4 – 9)
- Training control field (Buttons 10 – 20)

10.4.1 Displays and control buttons in the top control field

- **Back button:** Use this button to navigate back to your previous setting.①
- **Display field:** This field shows you the current training program and training phase as well as the time and date. The following training phases are displayed: Warm-up, training, cool-down.②
- **Home button:** Use this button to navigate back to the main menu.③



Fig. 31: Training menu

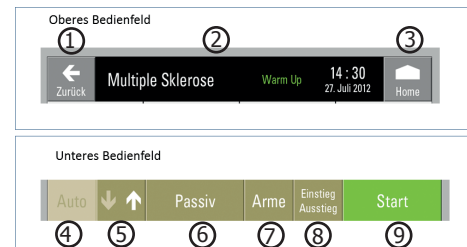


Fig. 32: Top and lower control field

10.4.2 Displays and control buttons in the lower control field

- **Automatic directional change (rotational direction automatic):** With this button you can activate or deactivate the automatic change in the pedaling direction. The button is green when the rotational direction automatic is activated. When it is deactivated, the button is highlighted in light green. You can adjust the time duration for the automatic directional change in the menu Settings. The default setting is 3 minutes. The rotational speed is gently reduced to a standstill before the rotational direction is changed. movanimo only changes the direction once the movement has stopped completely; it then starts out gently again.④
- **Switch button Forward-/Backward rotation (rotational direction):** With this button you can switch the pedaling direction from forward to backward (and vice versa). In forward the white arrow points upward. In backward the white arrow points downward. When changing the rotational direction, the rotational speed of the pedals is gently reduced to a standstill. movanimo only changes the direction once the movement has stopped completely; it then starts out gently again.⑤
- **Switch button Active/Passive:** Use this button to switch between the active drive, which requires the use of muscle power, and the passive drive, which uses motor power.⑥
- **Switch button Arm-/Leg trainer:** Use this button to switch between the arm- and leg trainer (accessory). The button is only active when the arm trainer has been installed correctly and the leg training has ended. It is not possible to operate the arm- and leg trainer at the same time.⑦
- **Access/Exit:** By pressing these buttons the pedals are moved to a favorable position for accessing or exiting the foot cuffs (also see Chapter 10.5).⑧
- **Start/Stop:** These button start or stop the training (see also Chapter 10.3.6).⑨

10.4.3 Display values in the training control field

The following values are displayed in the middle display field of the training menu:

- **Distance covered:** This field shows the distance that was covered through active muscle work. ⑩
- **Calorie display:** This field shows the energy in kcal that was exerted through active muscle work. ⑪
- **Watts display (generated output):** This field shows the active pedaling output – measured in watt. ⑫
- **Heart rate:** This field indicates your current heart rate, provided the accessory for the movanimo cardio set (article no. 8500) is attached. ⑬
- **Duration:** This field shows the total remaining training time, including warm-up and cool-down phase. ⑭
- **Timer** DiThis field shows the duration for the current training phase (warm-up, training, cool-down). Press this button to change the time duration. ⑮
- **RPM – Revolutions per minute:** This field shows the pedal revolutions per minute. Press this button in passive training to change the pedal revolutions per minute. ⑯

⑩ Km	2	⑪ Kcal	2	⑫ Watt	24	⑬ ASC: Aktiv
⑭ Timer tot.	60 min	⑮ Timer	13 min	⑯ U/min	4	
⑰ Spastik	2		Symmetrie %	⑱ 47 : 53		
⑲ Widerstand	6		Aktivitätsindex %	⑳ 36 : 64		

Fig. 33: training control field

- **ASC level – Anti-spastic control:** This field displays the sensitivity setting for the anti-spastic control in passive training. Press this button to adjust the sensitivity level.^{①⑦}
- **Symmetry:** This field indicates the strain level for the right and left half of your body during active training. It displays percentage values for the left and right side. The sum always adds up to 100 %. Press this button to access the graphical bar chart view for the symmetry.^{①⑨}
- **Resistance:** This field shows you the break resistance of the motor. Press this button to change the resistance during active training. In passive training this button is highlighted in grey.^{①⑨}
- **Activity index:** This field indicates the percentage of your active muscle participation.^{②①}

All fields in the training menu that can be modified during the training are marked with a blue triangle.

These are the following fields:

- RPM
- Resistance
- ASC-level
- Symmetry display (during active mode)
- Bpm (during cardio training)



Fig. 34: Customizable fields

10.5 Access-/ Exit aid

10.5.1 Access

Before beginning your training, use the access-/exit aid to bring the foot cuffs into a comfortable position. First, press the button Access-/Exit aid. This moves the right foot cuff down. Now place your right foot into the foot cuff and fixate the foot with the Velcro tape. Then press the button Access-/Exit aid again. Now the left foot cuff will move down. Place your left foot into the foot cuff and fixate it with the Velcro tape.

10.5.2 Exit

After you have finished your training, press the button Access-/Exit aid. This will move the right foot cuff down. You can now remove the right foot from the foot cuff. Then press the button Access-/Exit aid again to move the left foot cuff down so you can take your left foot out.

10.6 ASC – Anti-spastic control

The anti-spastic control (ASC) protects you during passive training from over-exertion or inappropriate straining in the case of spasms. The pedals stop as soon as movanimo recognizes a spasm. Additionally a red bar appears on the touch screen. The pedals remain motionless for ca. 4 seconds, and then the movement starts anew. By default the machine will start out in the opposite direction. You can change the restart direction (forward, backward, opposite direction) in the menu Settings (see Chapter 13.6).

The severity of spasms differs from patient to patient; therefore the sensitivity of the movanimo spastic control is customizable. By pressing the button **ASC level** during the current training, you can access the settings menu for the anti-spastic control.

Under this setting you can adjust the sensitivity for the spastic control with the Plus-/Minus buttons. You can select a level for ASC from 1 = very sensitive to 6 = less sensitive. If you set the anti-spastic control to a very low level, it will be triggered very quickly and stop the machine during training. If set to higher values, the ASC will only recognize more severe spasms.

If required, the anti-spastic control can also be deactivated under the menu Settings (see Chapter 13.6).

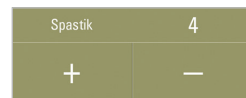


Fig. 35: Adjusting the anti-spastic control



Fig. 36: ASC aktiviert



WARNING

Risk of injury due to damaged or inappropriate adjusted safety equipment

- Before every training, make sure that anti spastic control is working correctly.
- We recommend always leaving the anti-spastic control on.
- Adjust the anti spastic control to the health and physical conditions of the user.
- The ASC should only be turned off when this has been cleared with your physician or therapist.

10.7 Further settings during training

10.7.1 Timer

You can access the settings menu for the timer by pressing the button **Timer**. This setting lets you change the time duration for the current training phase (warm-up, training, cool-down). You can set the training duration to a maximum of 120 minutes.

The training duration can be increased with the Plus button and decreased with the Minus button for the current training phase.

	WARNING
Danger of injuries due to excessive training duration	
• Adjust the training duration to your individual well-being. It is better to train regularly but with shorter training durations.	

10.7.2 RPM – Revolutions per minute

Press the button **RPM** during passive training to access the settings menu for the rotational speed (measured in pedal revolutions per minute).

Please take Warning:

- Pedals are accelerated and stopped in a gentle and consistent manner.
- The full rotational speed is reached after a minimum of 10 seconds.
- The maximum rotational speed in passive training is 60 RPM.

Use the Plus button to increase the revolutions per minute. You can increase the value to a maximum of 60 RPM. Use the Minus button to decrease the revolutions per minute.

The button RPM is only activated in passive training.



WARNING

Danger of injuries due to overexertion

- It is best to start with a low rotational speed and increase it gradually – depending on your personal well-being and capacity.

10.7.3 Resistance

Press the button **Resistance** during active training to access the settings menu for motor resistance.

With the Plus button you can increase the motor resistance during active training. You will now have to exert more power to rotate the pedals. With the Minus button you can decrease the motor resistance in active training. You will now need to exert less power to rotate the pedals. In passive training this button is highlighted in grey.

You can set the resistance from Level 1 = very low motor resistance to Level 20 = very high resistance.



WARNING

Danger of injuries due to inappropriate setting of training resistance

- It is best to start with a low resistance and increase it gradually - depending on your personal well-being and capacity.

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11. Training programs

11.1 Therapy programs – Indication-guided training

therapy programs	
standard training	multiple sclerosis
symmetry	parkinson's disease
endurance	post op
cardio	

Various training programs are deposited under this menu, depending on indication and therapy goal; these programs have been developed together with therapists. The training programs make the configuration of training parameters easier by suggesting training settings for the warm-up-, training- and cool-down phase. The preset values can be adjusted during the current training as well as under the menu Training settings.

Fig. 37: Menu Indication Guided Training



WARNING

Danger of injuries due to inappropriate adjustment of training parameters

- The preset values in the indication-guided training are general training suggestions.
- It is imperative that you coordinate and customize your training settings beforehand with your physician or therapists.

The following training programs have been preset for the indication-guided training:

- **Standard Training**
- **Symmetry**
- **Endurance:** Depending on the training level, a different default watt setting is set as the target value for the active training with this program. The motor resistance automatically adjusts to the rotational speed so that the generated output (measured in watt) always remains the same.
- **Cardio:** (only for accessory movanimo cardio set, article no. 8500) A certain heart rate is preset as the target heart rate for this program. The resistance of the motor is automatically reduced as soon as the configured heart rate is reached.



Fig. 38: Button heart rate

- **Multiple sclerosis:** After the passive warm-up training phase, a specific resistance is preset for this program, depending on the selected training level in the active training.
- **Parkinson's disease:** After the passive warm-up training phase, a specific resistance is preset for this program, depending on the selected training level in the active training. Rotational speed and motor power are set a little higher than for the program Multiple sclerosis since, based on experience, a somewhat larger pedal radius is required for training with this indication.
- **Post-operative:** Soft training is activated in active training for this program in order to gently support you in your movement.

NOTE

- ➔ In the menu Settings (see Chapter 13.2) you can change the values for the indication-relevant trainings at any time according to your requirements.



DANGER!

Danger to life due to inappropriate setting of heart rate

- The preset heart rate should be adjusted in accordance with the maximum heart rate of the respective patient.

11.2 Training phases

Each training is divided into three phases:

- **Warm-up phase**

This phase warms up your muscles, loosens your joints and relaxes cramps and spasms. A passive training with low rotational speed is normally configured for the warm-up phase.

- **Training phase**

In the actual training phase you start your individual training program, depending on the selected training program and your physical condition. Several forms of motor support are possible, depending on the training program and desired level of active muscle participation:

- **Active training – without motor support:** Solely own muscle activity. The pedal resistance can be adjusted at any time. It is recommended to begin with a lower pedal resistance.
- **Active Training – with motor assistance (Softtraining): Soft support by motor**
- **Passive training:** You are passively moved by the motor. The rotational speed can be adjusted at any time.

- **Cool-down phase**

When the training phase ends, a short cool-down phase begins in passive training at a low rotational speed, which gently fades out the training.

The status field at the top of the screen margin will display the active training phase and its remaining duration. You can adjust the duration of the respective training phase in the current training at any time by pressing the button Timer and adjusting the values to your requirements.

11.3 Training levels

The preset trainings in the indication-guided training let you choose from three training levels so that you can easily adapt your training according to your training progress and personal well-being:

- **Easy:**
Short training times and low rotational speeds
- **Medium:**
Medium training times and medium rotational speeds
- **Intensive:**
Long training times and high rotational speeds



Fig. 39: Display training program and phase



Fig. 40: Display training level



WARNING

Danger of injuries due to inappropriate or excessive training

- It is imperative that you coordinate your training times with your therapist and adjust the values if necessary.
- Choose an easy training level when starting out or if you are beginning your training again after a longer break.

11.4 Free training

This training menu lets you customize the training program yourself. Four training settings are possible.

11.4.1 Passive training

During passive training you are moved by the motor. You can adjust the rotational speed at any time up to a maximum speed of 60 RPM.

11.4.2 Active training

During active training you pedal against an individually configured brake resistance of the motor. You can adjust the resistance to 20 levels, depending on your individual requirements, from 1 = very low resistance to 20 = very high resistance. We recommend beginning with a low resistance at the beginning of your training.

11.4.3 Soft training

During soft training your active muscle participation is gently supported by the motor. This is especially helpful when your muscle strength has decreased significantly. The motor starts at a slow speed to support you.

11.4.4 Symmetry training

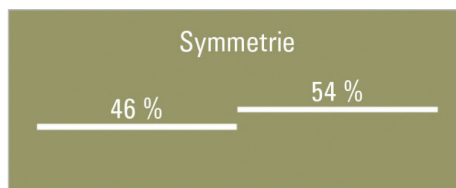


Fig. 41: Display Symetry

Symmetry training is a variant of active training, which uses the patient's muscle strength. The objective is to equally, i.e. symmetrically, strain the right and left half of the body. The horizontal lines and values indicate how intensely you are using your left or right leg. The values always add up to 100 %. The goal is to keep both horizontal lines at the same level; if possible, they should form a straight line. Ideally, the displayed value should be 50 % on both sides.

NOTE

- ➔ Please be aware that incorrect values may result when a different pedal radius has been set for each side or when you are not sitting in a central position in the chair or wheelchair.

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12. Training evaluation

12.1 Training analysis

 Back				 Home
km total	km active	duration total	duration active	
kcal	Joule	symmetry		
Watt Ø	Watt max	level of activity %		
rpm Ø	rpm max	muscle tone Nm Ø	muscle tone Nm max	
resistance Ø	resistance max	spastics		
				

Fig. 42: Training analysis

After ending your training, you can evaluate your results under the menu **Training analysis**.

The following values will be displayed:

- **Training distance (km total):** Total covered distance (active training and passive training)
- **Training distance active (km active):** Distance covered with own muscle strength (active training)
- **Training duration (total duration):** Total training duration
- **Training duration active (active duration):** Per centage of training duration in active training
- **Energy (kcal):** Expended energy in kcal
- **Energy (joule):** Expended energy in joule
- **Symmetry:** Average strain distribution of left and right side
- **Output (watt average):** Average of generated output in watt
- **Output (watt max):** Maximum of generated output in watt during training
- **Activity index (in %):** Percentage of generated distance with own muscle strength

- **Revolutions per minute (RPM average):** Average value of pedal revolutions per minute in active training
- **Revolutions per minute (RPM max.):** Maximum value of pedal rotations per minute in active training
- **Muscle tone (average toning nm):** Average value of motor sluggishness in nm
- **Muscle tone (max. toning):** Maximum value for motor sluggishness in nm
- **Average resistance:** Average brake resistance during active training
- **Max. resistance:** Maximum brake resistance during active training
- **Spasticity:** Amount of occurred spasms during training
- **Heart rate:** Average heart rate (bpm) during training, this value is only measured and displayed when a pulse measurement (accessory movanimo cardio set, article no. 8500) is performed during training.

The values of the last 10 trainings are saved. You can skip forward or backward with the Arrow buttons. The respective training date and time of training are displayed on the upper display line.

NOTE

- ➔ Please take Warning: All training values are approximate values. movanimo is not a medical device for diagnostic purposes.

12.2 Training statistics (menu Statistics)

Zurück		Home	
Km ges.	Km aktiv	Dauer ges.	Dauer aktiv
Kcal	Joule	Symmetrie	
Watt Ø	Watt max	Aktivitätsindex %	
U/min Ø	U/min max	Tonus Nm Ø	Tonus Nm max
Widerstand Ø	Widerstand max	Spastics	♥
Startdatum		Σ Trainings	Reset

Fig. 43: Training statistics

In the menu Statistics you can see your average or added training results in the long-term view since the last reset. The date of the training recording is displayed on the lower line.

When you press the reset button, all values are deleted and the training statistics start with the next training.

The following values are displayed as the total sum in the analysis time frame:

- **Training distance (km total and km active):** Distance covered with own muscle strength (active training) and distance covered with motor power (passive training)
- **Training duration (total duration and active duration):** Percentage of training duration in active training and total training duration
- **Spasticity:** Amount of occurred spasms during training

The following values are displayed as an average value for all trainings:

- **Energy (kcal und joule):** Expended energy in kcal and joule
- **Symmetry in %:** Average strain distribution of left and right side
- **Output (watt average and watt max.):** Average and maximum generated output in watt
- **Activity index:** Percentage of generated distance with own muscle strength in %
- **Revolutions per minute (RPM average and RPM max.):** Average and maximum number of pedal rotations per minute in active training
- **Muscle tone (average toning nm and max. toning nm):** Average and maximum value for motor sluggishness
- **Resistance (resistance average and resistance max.):** Average and maximum brake resistance during active training
- **Spasticity:** Amount of occurred spasms in training time frame
- **Heart rate:** Average heart rate (bpm) during training, this value is only measured and displayed when a pulse measurement (accessory movanimo cardio set, article no. 8500) was performed during training.

NOTE

- ➔ Please take Warning: The values are approximate values and are not suited for diagnostic purposes.

13. Settings

Einstellungen	
Zurück	Home
Trainingszeiten	ASC
Trainingsparameter	Drehrichtungsautomatik
Uhrzeit / Datum	Autom. Drehzahlanpassung
Benutzerdaten	Sprache
Technikparameter	

You can configure the following settings in the menu Settings:

13.1 Training times

Under this menu you can configure the times for the different training phases and training levels. The following values have been stored by default.

Fig. 44: Menü Einstellungen

Stufe	Warm-up	Training	Cool Down
Easy	5	8	2
Medium	2	15	2
Advanced	2	25	2

13.2 Trainingsparameter

In diesem Menü können Sie für die unterschiedlichen Programme und Trainingsstufen wichtige Trainingsparameter einstellen. Hierzu zählen:

- Trainingsmodus (Aktiv/Passiv/Soft)
- Drehzahl (im Passivbetrieb)
- Widerstand (im Aktivbetrieb)
- Pedalradius zur Umrechnung der Motorkraft
- Zielvorgabe Watt (Programm Ausdauer)
- Zielvorgabe Herzfrequenz (Programm Cardio)

13.3 Time and date

Use the Arrow buttons and Plus-/Minus buttons in this menu to configure the time and date settings. The time and date are maintained even when the device is turned off or enters the standby mode. The date and time must be configured anew if the power plug is pulled.

13.4 User data

You can configure the user data under this submenu. Use the Arrow buttons and Plus-/Minus buttons to set the following values:

- Gender (male/female)
- Age
- Weight
- Height

These data are relevant for converting the generated output (watt) to calories.

13.5 Technological parameters

13.5.1 Rotational speed limit

Under this submenu you can limit the motor's rotational speed if a certain rotational speed is not to be exceeded during active training. The configuration ranges from 0-120 RPM. The default setting is 60 RPM.

13.5.2 Block changes

Activate this menu option to block all buttons in the active training with the exception of the Stop button.

If this menu option has been activated, a little lock symbol is displayed on the upper status line in the training menu. You can end the training program at any time by pressing the Stop button.

13.5.3 Reset factory settings

Press this button to reset the machine to default factory settings.

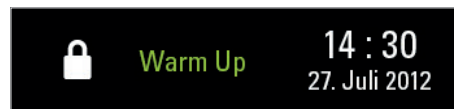


Fig. 45: Display training settings blocked

NOTE

- ➔ When you reset the system to the default settings, all settings that were changed in the menus Training times and Training parameters will be reset to the default factory settings.
- ➔ The configured values for time and date remain.

13.6 Configuration of the anti-spastic control (ASC)

13.6.1 ASC level

Under this submenu you can configure the sensitivity level for the anti-spastic control (ASC). You can choose a value between 1 = very sensitive and 6 = less sensitive (see also Chapter 10.6).

13.6.2 ASC on/off

Under this submenu you can turn the anti-spastic control on or off. The ASC is activated by default. The indication ASC off will be displayed in the training menu if the anti-spastic control is deactivated.



WARNING

Risk of injury due to damaged or inappropriate adjusted safety equipment

- We recommend always leaving the anti-spastic control on.
- Only turn ASC off when this has been cleared with your physician or therapist.

13.6.3 Change of direction

Under this submenu you can configure in which direction the movanimo movement trainer should turn after a spasm recognition. Three settings are possible:

- Opposite direction
- Forward (e.g. for extension spastic)
- Backwards (e.g. for bending spastic)

By default the movanimo machine turns in the opposite direction.

13.7 Rotational direction automatic

Under this submenu you can configure the time after which the rotational direction of the movanimo should change while in passive training, provided the directional change button has been activated. By default the time is set to 3 minutes.

13.8 Automatic rotational speed adjustment

In this menu you can activate or deactivate the automatic rotational speed adjustment.

13.9 Language

Under this submenu you can choose the language setting for the software. You have the option between German and English. By default English is selected if delivery is within Germany. Other languages are available from the manufacturer as accessories.

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14. Problems and corrections

Problem	Possible cause	Measure	See Chapter
movanimo does not start.	Standby mode of the device is active.	Touch display at arbitrary location for ca. 5 seconds.	8.3
	Device is not turned on.	Turn on device with the power switch.	8.2
	Power plug is disconnected. Fuse is blown.	Check whether power plug is connected. Contact service technician.	8.2
movanimo runs unevenly.	Pedal radius has been configured differently on either side.	Set same pedal radius on both sides.	8.5
	Wrong sitting position	Correct the sitting position.	9.1
Resistance is too high when pedaling.	Brake resistance in active training is set too high.	Reduce brake resistance. Activate soft training if required.	10.7.3
ASC spastic control is triggered prematurely or too often.	Sensitivity for spastic control (ASC level) is set too high.	Increase setting for spastic control (ASC level).	10.6

Arm trainer does not start.	Power plug for arm trainer is disconnected.	Check whether power plug for arm trainer is connected.	8.2
	Arm trainer is not active in the training menu.	Under the training menu switch from leg trainer to arm trainer.	10.4.2
	Leg training is not yet complete.	End leg training or press stop button.	10.3.6
Display for heart rate does not work.	movanimo cardio set is not inserted.	Check whether the receiver is correctly inserted in the jack outlet.	8.10
	Receiver is not inserted.	Properly insert receiver in the jack outlet. The logo must be in front.	8.10
	Chest strap was not put on properly.	Check position of chest strap, possibly moisten.	8.10
	Chest strap and receiver are not aligned toward each other.	Align position of chest strap and receiver toward each other.	8.10

Please coordinate shipping- and packaging specifications with us beforehand if you wish to return the device or any accessory parts to PARAVAN medical GmbH

15. Safety-related controls and maintenance

The device must be examined once a year in a technical safety inspection (TSI) and technical measurement evaluation TME - together with this operating manual and the appropriate medical product book. These inspections must be performed exclusively by persons who can properly execute these examinations based on their training, expertise and experiences, gained during their practical occupation. They must be able to perform these inspections without instructions.

Terms: One-year

- General visual inspection
- Electrical safety inspection according to VDE 0751 (protective wire inspection, discharge current)
- Inspection of the safety concept according to valid inspection instructions
- General functional check

All maintenance must be exclusively performed by companies that have been authorized by PARAVAN medical GmbH to perform maintenance work on the respective device type.



DANGER!

Danger to life due to electrical shock

- Prior to any maintenance of the device, make sure that the machine is turned off and the power plug has been disconnected!

16. Cleaning and care



DANGER!

Danger to life due to electrical shock

- Before cleaning the device, make sure that the machine is turned off and the power plug has been disconnected!
- Ensure that no cleaning or disinfection liquids penetrate the casing openings and run into the machine.

- ➔ Always switch off the device before cleaning and disinfection.
- ➔ The device can be cleaned with a wet or dry towel.
- ➔ When using detergents, always moisten the towel with detergent. Do not spray cleaning detergents or disinfectants directly onto the device or its accessories.
- ➔ When cleaning the display (screen), only use cleaning detergents that have been approved for cleaning screens, touch screens, Warningbooks etc.
- ➔ Do not damage any labels or foils when cleaning and disinfecting.
- ➔ Ensure that no liquids penetrate the casing openings and run into the machine.
- ➔ Manual cleaning can be combined with a disinfective wiping of the movanimo surface (e.g. handle-bars, foot cuffs).
- ➔ Allow disinfectant solutions to dry thoroughly before switching on the device again.



CAUTION

- Use suitable cleaning detergents for the display (touch panel). Solvent-containing, caustic or harsh cleaning detergents may not be used as these detergents can damage the plastic parts of the display.
- Only cleaning detergents and disinfectants are permissible that have been examined according to the valid national committees.
- Use exclusively mild and environment-friendly cleaning agents and disinfectants.

 WARNING
Risk of infection due to contaminated parts of the device or accessories
• Wear suitable gloves for cleaning and disinfection.

NOTE

➔ If you have any questions, please contact the manufacturer of the disinfectant.

17. Service life and disposal

17.1 1 Duration of servicibility

Our product has been designed to be repeatedly used during its service life. When passing the device on to someone else, please make sure to also pass on all technical documents that are required for safe operation. Our product must be cleaned or possibly disinfected and fully inspected by an authorized specialist retailer. If used properly, the device and its accessory parts can be used for 10 years.

NOTE

- ➔ If you have any questions, please contact the manufacturer. You should immediately stop using the device and contact the manufacturer if malfunctions or damages become apparent.

17.2 Disposal

The machine has a long lifespan and is made of metal and plastics. The electronics must be properly uninstalled prior to disposal. By removing these parts the movanimo is no longer functional. Prior to disposal the system may have to be protected from accidental reuse. Metal-, electronic- and plastic components must be disposed according to local guidelines.

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18. Technical data

18.1 Description of the system

The device is a motor-powered movement trainer for active and passive movement therapy.

18.2 Dimensions and weight

Leg trainer (movanimo touch)

Height	102,5-113 cm
Length	66 cm
Width	67,5 cm
Weight	39 kg
Minimal distance of foot cuffs *)	12 cm
Maximum distance of foot cuffs*)	25 cm

*) measured from the inside

Arm trainer (movanimo touch plus)

Height	109-120 cm
Length	85 cm
Width	67,5 cm
Weight	52 kg

18.3 Technische Werte

Power connection (external power supply AHM 150 PS24C2)	100 - 240 VAC max 150 VA 50/60 Hz
Motor und electronics	24 volt – direct current (DC)
Power consumption	10 watts (standby) 12 watts (when not in use)
Adjustable range of resistance in active mode(leg exerciser and arm exerciser)	1-20
Torque range - leg exerciser - arm exerciser	2-8 Nm 2-5 Nm
Pedal radius leg exerciser Pedal radius arm exerciser - standard version - short version (option)	continuous adjustment 55-130 mm 120 mm 75 mm
Range of rpm (leg exerciser and arm exerciser) passiv (motor driven) active (own muscle strength)	 1-60 U/min 1-90 U/min

Protection Class	II
Protection category	Typ BF
Degree of protection	IP 20
CE norm	Directive 93/42 EWG DIN EN 60 601-1 DIN EN 60 601-1-2 DIN EN ISO 12182 DIN EN ISO 13485 machinery directive 2006/42 EG
Medical product class according to Medical Devices Act	IIa (according MPG)
Maximum permitted body weight	130 kg

18.4 Operating- and transport conditions

Betriebsbedingungen

Temperatures	10°C - 40°C
Rel. air humidity	20% - 85%
Air pressure	800-1100 hPa

Transportbedingungen

Temperatures	5°C - 50°C
Rel. air humidity	20% - 85%
Air pressure	800-1100 hPa

18.5 Used materials

- Powder-coated steel
- Zinc-coated steel
- Premium steel
- Anodized aluminum
- PVC
- Polypropylene

19. Electromagnetic compatibility (EMC)

19.1 Information regarding Electromagnetic compatibility

- ➔ The device installation and maintenance must be exclusively performed by professional personnel.
- ➔ In particular proper cabling with prescribed cable types and -lengths and the solid assembly of connectors and their locking mechanisms must be ensured.
- ➔ The usage of longer cable lengths may lead to an increased interference emission or reduced interference immunity.
- ➔ Electric magnetic emissions from the device are below the normed interference emission threshold values. However, complete protection against interferences from radio- and television reception cannot be ensured when the device is placed within 10 m of a receiving antenna in a residential- or business area.
- ➔ In special cases, when e.g. highly sensitive utilities are placed in the immediate vicinity, additional remedial measures may have to be implemented to ensure that the electric magnetic interference emission is lowered below the stipulated threshold values.

19.2 Compliance level

The immunity level requirements of IEC 60601 are met.

Manufacturer’s declaration – Electromagnetic emissions

movanimo is to be operated in the electric magnetic environment described below. The client or user of the device should ensure that it is used in such an environment.

Emission measurements	Compliance	Electric magnetic environment - Guidelines
RF emissions according to CISPR11	Group 1	movanimo exclusively uses RF energy for its internal functioning. RF emissions are very low, and it is unlikely that nearby electronic devices will be disrupted.
RF emissions according to CISPR11	Class B	The device is intended for usage in all facilities.
Harmonic emissions according to IEC61000-3-2	Class A	
Emissions of voltage fluctuations/flicker according to IEC61000-3-3	Fulfilled	

Table 201 according to DIN EN 60601-1-2, 6.8.3.201

Manufacturer's declaration – Electromagnetic immunity

movanimo is to be operated in the electric magnetic environment described below. The client or user of the device should ensure that it is used in such an environment.

Interference immunity checks	IEC 60601-Test level	Compliance level	Electric magnetic environment - Guidelines
Discharge of static electricity (DSE) according to IEC 61000-4-2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	Floors should be made of wood or concrete or tiled with ceramic tiles. The relative humidity must be at least 30 % if the floor consists of synthetic material.
Quick transient electrical disturbance variables/Bursts according to IEC 61000-4-4	± 2 kV for power lines ± 1 kV for entry- and exit lines	± 1 kV for entry- and exit lines	The quality of the power voltage should comply with a typical business- or hospital environment.
Surge voltages (surges) according to IEC 6100-4-5	± 1 kV push-pull voltage ± 2 kV common mode voltage	Not applicable	Die Qualität der Versorgungsspannung sollte der einer typischen Geschäfts- oder Krankenhausumgebung entsprechen.

Voltage dips, short-term interruptions and fluctuations of the supply voltage according to 61000-4-11	< 5 % U_T (>95 % dip of U_T for 0.5 period 40 % U_T (60% dip of U_T) for 5 periods 70 % U_T (30% dip of U_T) for 25 periods < 5 % U_T (>95 % dip of U_T for 5 seconds	Not applicable	The quality of the power voltage should comply with a typical business- or hospital environment. If the user requires continued usage of the movanimo even during disturbances in the energy supply, it is recommended to supply the movanimo device from a disturbance free power supply or battery.
Magnetic field for the supply frequency (50/60 Hz) according to IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields for the net frequency should comply with typical values as they exist in the business- and hospital environment.
COMMENT U_T is the alternating supply voltage prior to application of test levels.			

Table 202 according to DIN EN 60601-1-2, 6.8.3.201

Manufacturers declaration - Immunity to electromagnetic disturbance

movanimo is to be operated in the electric magnetic environment described below. The client or user of the device should ensure that it is used in such an environment.

Inter- ference immunity checks	IEC 60601- Test level	Compliance level	Electric magnetic environment - Guidelines
Conducted RF disturbance variables according to IEC61000-4-6	3 Veff 150 kHz up to 80 MHz	V1 = 10 Vemk @ 150 KHz up to 80 MHz	Portable and mobile radio devices should be used within the recommended protective distance of the device and its cables; this distance is calculated according to the applicable equation for the sending frequency. Recommended protective distance: $d = \{ 3.5 / V1 \} \sqrt{P}$ $d = \{ 3.5 / E1 \} \sqrt{P} \text{ for 80MHz up to 800 MHz}$ $d = \{ 7 / E1 \} \sqrt{P} \text{ for 800 MHz up to 2.5 GHz}$ With P as nominal capacity of the sender in watt (w) according to the information of the sender manufacturer and d as the recommended protective distance in meters (m).

Radiated RF variable according to IEC61000-4-3	3 V/m 80 MHz up to 2.5 GHz	E1 = 10 V/m @ 80 MHz up to 2.5 GHz	The field strength of the stationary radio senders should be lower than the compliance level for all frequencies according to an on-site inspection. Disturbances are possible  vicinity of devices with the following sign.
COMMENT 1: The higher frequency range applies to 80 Hz and 800 MHz COMMENT 2: These guidelines may not apply to all cases. The proliferation of electric magnetic variables is influenced by absorptions and reflections of buildings, objects and people.			
The field strength of stationary senders, as e.g. base stations of radio phones and mobile land radio devices, amateur radio stations, AM- and FM radio- and television stations cannot be predicted precisely in theory. A study of the setup location should be conducted in order to determine the electric magnetic environment for stationary senders. If the measured field strength at the location where the device is used exceeds the aforementioned compliance level, the device should be monitored in order to verify proper functioning. Additional measures, e.g. an alignment change or a location change for the device, may be required when unusual performance characteristics are observed. The field strength should be lower than 10 V/m for the frequency range of 150 kHz to 89 Mhz.			

Table 204 according to DIN EN 60601-1-2, 6.8.3.201

Recommended protective distance between portable and mobile HF telecommunication devices and movanimo (Tab. 206 according to DIN EN 60601-1-2)

movanimo is recommended for operation in an electric magnetic environment in which the HF disturbance variables are controlled. The user of the device can help avoid electric magnetic disturbances by adhering to a minimum distance between portable and mobile HF telecommunication devices (senders) and the machine - depending on the power output of the communications device as stated below.

	Protective distance depending on the sending frequency (m)		
Nominal power of the sender (w)	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2,5 GHz
	$d=\{ 3,5/V1 \}\sqrt{P}$	$d=\{ 3,5/E1 \}\sqrt{P}$	$d=\{ 7/E1 \}\sqrt{P}$
0,01	0,04	0,04	0,08
0,1	0,11	0,11	0,22
1	0,35	0,34	0,70
10	1,11	1,11	2,22
100	3,50	3,50	7,00
For senders with a maximum nominal capacity that is not stated in the table above, the recommended protective distance in meters (m) can be determined by using the equation in the respective column where P is the maximum nominal capacity of the sender in watt (w), according to the declaration of the sender manufacturer. COMMENT 1: The higher frequency range applies to 80 Hz and 800 MHz. COMMENT 2: These guidelines may not apply to all cases. The proliferation of electric magnetic variables is influenced by absorptions and reflections of buildings, objects and people.			

Table 206 according to DIN EN 60601-1-2, 6.8.3.201

PARAVAN medical GmbH is convinced of the high quality and longevity of the movanimo movement trainer and therefore grants its clients a voluntary warranty extension of 5 years for the flawless condition and performance of its devices. The warranty is granted on the basis of the following conditions:

- **Object of the warranty extension**

PARAVAN medical GmbH provides a voluntary 5-year warranty on the mechanical parts of the movanimo movement trainer series that were manufactured by PARAVAN medical GmbH and purchased from 01.12.2013 on. Your legal and contractual warranty claims remain untouched by this guarantee.

- **Registration**

The extension of the warranty time only applies when the product was registered at PARAVAN medical GmbH within 8 weeks of the delivery date. Please use the warranty form that was sent to you with the movement trainer for this purpose. We will provide a warranty certificate after registration. The registration is only granted if you consent to the saving of the queried data.

- **Duration of the warranty extension**

The warranty granted by PARAVAN medical GmbH has a term of 5 years. The warranty begins when the goods are delivered to the buyer.

- **Extent of warranty extension**

The warranty includes the repair of all deficiencies and damages of mechanical parts that occurred within the warranty term and have resulted from construction errors, manufacturing errors or material deficiencies. In this case PARAVAN medical GmbH will pay for the material costs, repair costs and transportation costs that are required to restore the device back to its original functioning condition. The warranty only applies in case of actual deficiencies or damages resulting from construction errors, manufacturing errors or material deficiencies. If a deficiency cannot be repaired or the repair costs exceed the present value of the device, compensation for the present value is granted.

- **Exclusion of the warranty extension**

The warranty extension does not apply to electronic components, the touch panel, electronic motors or wear parts (e.g. fan belts, handholds, Velcro tapes) and consumable materials such as merchandize and accessories that were not manufactured by PARAVAN medical GmbH The warranty also does not apply to personal damages and consequential damages as well as damages outside of the device.

- **Cancellation of the warranty extension**

The warranty claim is revoked in case of faulty maintenance or when the prescribed service intervals were not observed. The warranty is also cancelled when repairs or measures are performed by persons who have not been authorized by PARAVAN medical GmbH or when the device is equipped with accessory parts that have not been approved by PARAVAN medical GmbH.

The following faults and damages are also excluded from this warranty:

- o Damages resulting from improper usage or wrong setup
- o Damages resulting from non-compliance with the operating manual
- o Damages through outer influences, e.g. transport damages, impact- or striking damages
- o Damages resulting from force majeure.

The warranty becomes completely invalid when individual warranty conditions are not fulfilled.

- **Processing the warranty case**

Damage repair is exclusively performed by PARAVAN medical GmbH or a service authorized by PARAVAN medical GmbH (usually a medical house). PARAVAN medical GmbH organizes the processing of the warranty case with the authorized customer service. It must be immediately pointed out to PARAVAN medical GmbH if a damage has occurred that resulted in a liability obligation under this warranty. An extensive damage description and the original bill, including serial number, must be sent to PARAVAN medical GmbH. You are obligated to keep the exchanged parts until the final settlement of the warranty case or until receiving the written clearance by PARAVAN medical GmbH. The exchanged parts become property of PARAVAN medical GmbH.

- **Regional applicability and applicable law**

The regional applicability for this warranty includes the areas of the European Union, Switzerland and Liechtenstein. German laws are exclusively applicable for warranty claims.

21. EC-Declaration of conformity

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We hereby declare with sole responsibility that our products:

movanimo touch (Class IIa-product according to Annex IX)

movanimo touch plus (Class IIa-product according to Annex IX)

were manufactured in compliance with the requirements of the European guideline 93/42/EEC according to Annex VII, in compliance with the quality management monitored by the notified body according to Annex II and in compliance with the following norms:

DIN EN 60 601-1 from 07/2007

DIN EN 60 601-1-2 from 07/2011

DIN EN ISO 12182 from 07/2012

Manufacturer: PARAVAN medical GmbH
PARAVAN Str. 5-10
72539 Pfronstetten-Aichelau
Germany
Phone: +49 7388 999 5 976
E-mail: info@paravan.de
www.paravan.de

The EC-declaration was realized in collaboration of the notified body:

Berlin Cert GmbH
Dovestr. 6
10587 Berlin
Identification number CE633

Pfronstetten, April 15th, 2014



Wolfgang Glauner
CEO PARAVAN medical GmbH

The EC-declaration of conformity is valid for the period of the certificate Annex II of the directive 93/42/EEC.

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Space for your Notes



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