

# Instruction Manual

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## Motomed gracile 12



englisch

**RECK**

valid for Software-Version 4.02 and subsequent versions: August 2007

- GB Please use the MOTOMed only after you have read the instruction manual.  
If you should not understand the language of the present version, please request the instruction manual in your national language.
- DE Benutzen Sie das MOTOMed erst, nachdem Sie die Gebrauchsanweisung gelesen haben. Sollten Sie die vorliegende Sprachversion nicht verstehen, fordern Sie bitte eine Anleitung in Ihrer Landessprache an.
- FR Avant de commencer votre entraînement MOTOMed, veuillez lire le mode d'emploi. Si ce mode d'emploi ne correspond pas à votre langue, n'hésitez pas à nous demander une autre traduction.
- ES Utilice el MOTOMed sólo después de haber leído las instrucciones de uso. Si no entiende el idioma de la presente versión, por favor exija un manual en su lengua nacional.
- PT Use o MOTOMed somente, depois de ter lido as instruções de operação. Em caso que você não compreenda a língua desta instrução, peça por favor uma orientação em sua língua nacional.
- IT Per un ottimo funzionamento del MOTOMed leggere le istruzioni per l'uso. Se riscontrate qualche difficoltà riguardo la vostra lingua madre consultate il vostro servizio assistenza.
- NL Neem uw MOTOMed pas in gebruik nadat u de gebruiksaanwijzing hebt gelezen. Indien de gebruiksaanwijzing niet overeenstemt met uw moedertaal, aarzel dan niet ons te contacteren en een andere taalversie aan te vragen.
- SV Använd MOTOMeden endast, efter du har läst fungerande anvisningen. Om dig bör inte förstå den tillgängliga språkversionen, förfrågan var god a vägledning i ditt nationella språk.
- DK MOTOMed må først anvendes, når brugsanvisningen er gennemlæst. Forstår du ikke vedlagte brugsanvisning, rekvirer en dansk vejledning hos ProTerapi.
- PL Przed skorzystaniem z urządzenia MOTOMed prosimy zapoznać się z instrukcją obsługi. Jeśli instrukcja obsługi jest napisana w języku obcym ządajcie Państwo instrukcji w języku przez Państwa znanym.
- RU **Используйте MOTOMед только после того, как прочитаете инструкцию по эксплуатации. Если Вам не понятен язык, на котором написана инструкция, запросите, пожалуйста, одну на родном языке.**

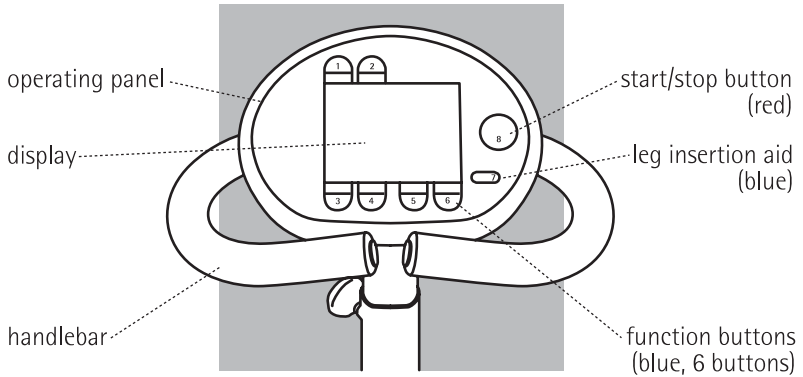


fig. 1

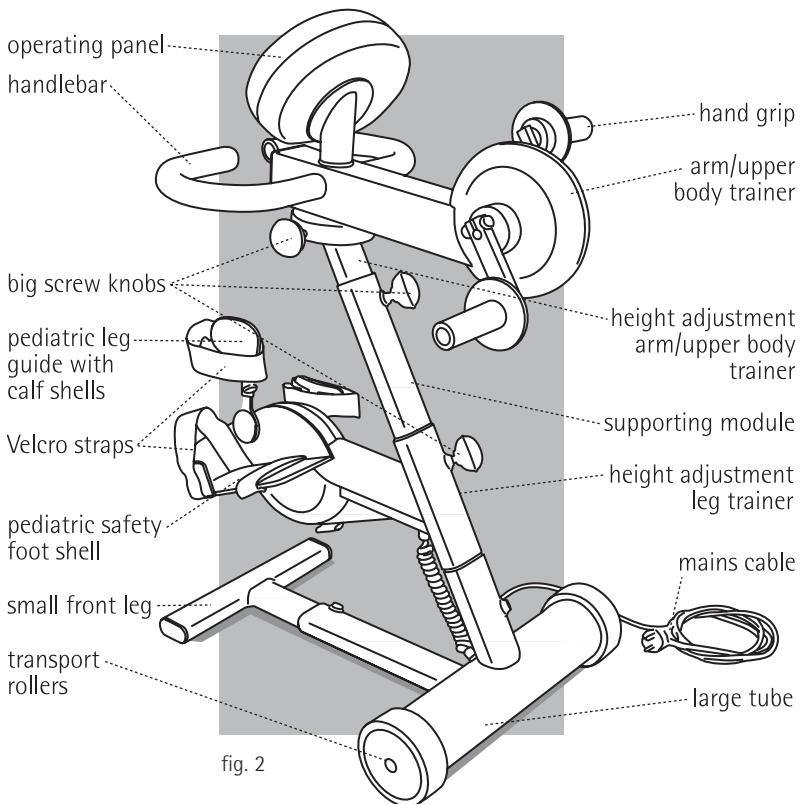


fig. 2



# gentle, attractive and intelligent...

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Congratulations! You have made an excellent choice by purchasing your MOTOmed gracile12. This MovementTherapyDevices provides outstanding performance. Supported by the latest computer technology it is an innovative quality product "made in Germany" by RECK.

The MOTOmed gracile12 is a motor assisted MovementTherapyDevices that thinks with you. Enjoy the benefits every day.

This instruction manual will help you to get to know the MOTOmed gracile12. It will guide you through the functions and give some suggestions and tips on how to use your new movement therapy system so as to gain optimal benefit from the training. Before starting the training, please follow the *safety precautions* listed in chapter 12.

see page 83

If you have further questions or comments, please don't hesitate to call your MOTOmed representative or the RECK customer service team. We are pleased to assist you.

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Enjoy training with the MOTOmed gracile12!



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## Application

The MOTomed gracile12 is suitable only for the active and passive movement of a person's lower and upper extremities. During the training the MOTomed gracile12 can be operated with an operating panel.

## Normal use

During the training the user is seated in front of the device in a safe and sturdy wheelchair or in a stable chair (without castors) with a sufficiently high back. Make sure to sit up straight and that the wheelchair (or chair) is secured sufficiently in order to prevent tipping over.

Some specific power wheelchairs, standing chairs and sport wheelchairs with a large front or which don't have stowable or removable foot rests are not suitable.

The MOTomed gracile12 can also be used being in a lying position.

You are only allowed to use the MOTomed gracile12 following the instructions and safety precautions in this manual and if no therapist and doctor states any contraindication. Adjustments and changes can only be carried out with the pedals not moving – except for the operation via the operating panel.

## Restriction of liability

The manufacturer doesn't assume liability for consequences of

- abuse and misuse
- neglect of this instruction manual
- wanton damage and reckless usage
- over intensive training
- use with an unsuitable wheelchair or chair
- use without prior consultation of the responsible doctor and therapist
- attachment of unapproved accessories
- repair or other interference by any person non-approved by the manufacturer



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## Training hints

Before using the MOTOmed gracile12 please consult your doctor and therapist in order to adjust your training program and the duration of your training sessions to your individual state of health.

Regular training with the MOTOmed gracile12 is important in order to achieve therapy benefits. At the beginning, you should not train for more than 10-15 minutes continuously. It is better to train two to three times per day for approximately 5 to 10 minutes each period. Please start at a slow speed and with a small pedal radius. After about one week you should slowly increase the duration of your training, the speed and – if necessary – the pedal radius, according to your individual response to the MOTOmed gracile12 training.

## How do I train appropriately?

Do you have any questions about the training with the MOTOmed gracile12? Any problem that occurred? Please call your MOTOmed representative or the RECK company, phone +49 7374 18-85. We are pleased to assist you.

see page 81

## Instructions in case of spasms

If you are affected by spasticity, slow and regular movement with the MOTOmed gracile12 is important. Just like in physiotherapy, it is recommended to train legs or arms in a way that no spasm will occur.

Particularly in the beginning it is recommended to train at a slow speed. This is particularly suitable in order to loosen up muscles. You will notice that through this way of training, you will experience less tension.

see page 37 The *MovementProtector with SpasmControl* should always be switched on (ex works setting) in case a spasm might occur or in the case of sensitive tendons, joints or ligaments. If a spasm or a resistance occurs, the motor stops automatically by the MovementProtector. After a few moments the pedals start rotating slowly again in the opposite direction. The *SpasmControl* changes the direction of pedal rotation according to the therapeutic principle looking for the direction in which the spasm can be eased (antagonistic inhibition). Therefore, muscles can relax and tensions are being relieved. This process will be repeated until the spasm is released.

During the training the integrated *MovementProtector* adapts automatically to the condition of your muscles (muscle tone). Therefore, the MovementProtector is always optimally sensitive.

see page 68 In case of strong spasticity it is recommended to use a *wheelchair*  
see page 69 *stabilizer (item no. 8)* or *chair fixation with stabilizer (item no. 511)*.

see page 40 For special cases (e.g. osteoporosis, very strong spasticity) the maximum motor power can be adjusted during passive training by pressing the buttons "extras" and then "motor power".

Low motor power: e.g. for osteoporosis

High motor power: e.g. for strong spasticity

Please consult your doctor and therapist before adjusting the motor power.

## In general

Pay attention to your seating position and posture when training – especially when using the arm/upper body trainer. The wheelchair or chair should be straight and in line with the MOTomed gracile12. You should be sitting upright, back straight, resting on the back support of the chair or wheelchair.

The degree of movement of the knee joint and hip joint depends on the distance between the MOTomed gracile12 and the chair or wheelchair. Position your chair from the MOTomed gracile12 according to the flexibility of your joints. Avoid at all times overstretching or locking of the knee joints and start off sitting reasonably near the MOTomed gracile12.

When using the arm/upper body trainer make sure that the elbow joints are never fully stretched during the training. Adjust the position of the arm/upper body trainer to your height.

see page 55, 66 If you lack support due to the effects of paralysis it is absolutely essential that *leg guides* and *pediatric forearm shells with arm cuffs* (item no. 552K or 556K) are used. Always make sure that arms and legs are properly secured in the forearm shells or foot shells.



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## Set up

In case the packaging or the MOTomed gracile12 got damaged through transportation, please contact your MOTomed representative.  
see page 81

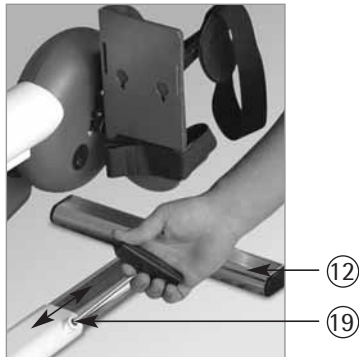


fig. 3

see page 64

If an *arm/upper body trainer (item no. 599)* is fitted, you should extend the front leg ⑫ by approx. 15 cm/6 inches. However, please keep a minimum insertion of the front leg of 10 cm/4 inches for optimal stability of the MOTomed gracile12. In order to adjust the front leg of the device you have to tilt the MOTomed gracile12 backwards carefully, open the Allen screw ⑰ at the front leg ⑫ of the MOTomed gracile12 and pull out the front leg of the device. After adjustment, please tighten the Allen screws. You can find an Allen key at the bottom of the device.

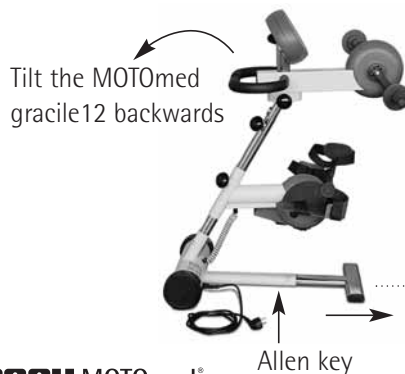


fig. 4

**Important:** pull out the small front leg and screw it tight again

## Stand-by mode

Please plug the mains cable into the MOTomed gracile12 and the mains plug into a wall socket.

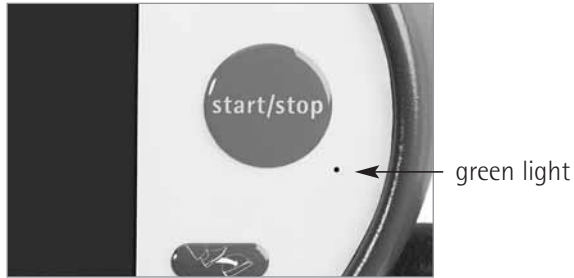


fig. 5

The green light next to the "start/stop" button on the display module is now blinking for 6 seconds. Then blinking changes to a continuous light, the MOTomed gracile12 is now in stand-by mode. Only when the "start/stop" button is pressed the MOTomed gracile12 will go into operation.

The MOTomed gracile12 is laid out for continuous stand-by mode. For repair, cleaning or transportation of the MOTomed, the mains plug has to be pulled.

In order to save energy, the MOTomed gracile12 switches into stand-by mode a few minutes after the training. The energy usage in stand-by mode is less than a television in stand-by mode. If the device is used for training 1 hour daily and 23 hours in stand-by mode it will be approximately 10 EUR in annual power costs (based on energy costs in Germany).

## Moving/transporting

The MOTomed gracile12 is equipped with two large transport rollers so that it can be easily moved within a building.

To move the MOTomed, please hold the handlebar or the arm trainer of the MOTomed gracile12 and tilt it backwards until you can easily pull or push the MOTomed gracile12 on its large transport rollers. The mains cable has to be detached completely prior to the transport.



fig. 6

If you have to move the MOTomed gracile12 over any small bumps, make sure that both transport rollers move simultaneously over the bump. Don't use the transport rollers to move the MOTomed gracile12 across uneven ground (e.g. cobblestones). In both cases damage to the casing of the MOTomed gracile12 and the electronics inside could result.

For longer distances on uneven ground you should use a handcart (i. e. trolley) in order to protect the transport rollers.

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## Introduction

The following pages will explain how to operate the MOTomed gracile12. First, short instructions will be given for the basic functions of the "leg training" and the "arm/upper body training". Chapter "settings" offers a detailed explanation of the operation, step-by-step.

## What is ServoCycling?

see page 29 *ServoCycling* is a special function of the MOTomed gracile12 for users with very little residual muscle strength. The MOTomed *ServoCycling* function has an effect similar to a servo-assisted steering system, which could enable you to steer a truck using your little finger. Even with minimal muscle strength, MOTomed *ServoCycling* supports complete and even pedal movements. Active cycling builds up strength, coordination and motor activity.

The MOTomed gracile12 recognizes your active impulse and the MOTomed *ServoCycling* reinforces it throughout one whole revolution. The MOTomed gracile12 accelerates noticeably. That is why you immediately see and feel the effects of your own activity. As soon as you stop giving active impulses the speed drops gently. This increases the benefit of the therapy. *ServoCycling* is a great experience!

## SymmetryTraining

see page 31 During active cycling with your own muscle strength, the *Symmetry-Training* function shows how much either leg "is working" at that moment. Due to this display you can practice to train and put strain on both legs equally and apply your strength more deliberately. The displayed values are not suitable for diagnostic purposes as the MOTomed gracile12 is not a medical measuring equipment. Due to spasticity and contractures, the displayed values are distorted. We recommend relaxing the muscles by training passively before starting active cycling with one's own strength.

## Short instructions leg training

1. **Set up:** Place the MOTomed gracile12 on a non slip surface with the large tube ⑪ against a wall if possible. Sit in a wheelchair or in a stable chair in front of the MOTomed gracile12 within a reasonable distance to the trainer – the legs must be able to turn freely but the knee joints must not be stretched out completely at any time while training. Please adjust the correct height of the pedal axle before starting the training in order to ensure an optimal training process.

see page 53

**Important:** Make sure the wheelchair or chair is secure so that it will not move or slip.

2. **Insertion and securing aid** (if needed): Press the long blue button " " ⑦. The buttons "pedals forwards" ⑥ and "pedals backwards" ⑤ allow you now to move the foot shells ⑩ to the lower position to help you insert your legs one after the other simply and comfortably.

**Hint:** If your legs are not equally flexible, we recommend inserting the stiffer one first. Then fix your feet and legs with the Velcro straps or the *self-operating foot holders* (item no. 598) in the foot shells.

see page 62

3. **Start the training:** Press the red "start/stop" button ⑧. The foot shells automatically start moving slowly and the display ⑨ turns on. Have your legs moved "passively" for a short warm-up of a few minutes.

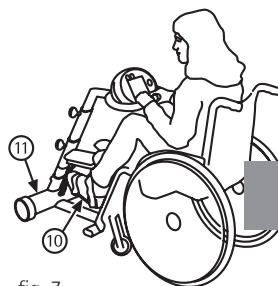


fig. 7

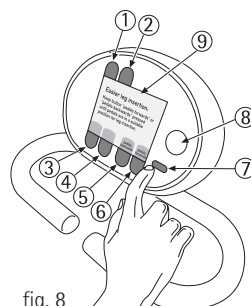


fig. 8

4. **Change speed/direction:** With the "speed" buttons you can increase or decrease the number of revolutions of the foot shells per minute. Upon pressing the button "slow" (turtle) ⑤ you reduce speed, pressing the button "fast" (rabbit) ⑥ you increase it. The button "direction" ④ allows you to switch the direction of movement from forward to backward and vice versa. The buttons ③ to ⑥ have several functions depending on whether you are training with the assistance of the motor or cycling actively, i.e. you pedal yourself.



fig. 9

5. **Cycling "actively", without motor:** After you've relaxed your muscles enough you can start cycling actively with your own strength. Press the button "ServoCycling" (③ see fig. 9). Pedal yourself and the MOTomed makes out your own activity. The display ⑨ gives you feedback showing a bicycle icon and the remark "you are cycling yourself". With the buttons "light" (small weight) ⑤ and "heavy" (large weight) ⑥ you can change gears according to your muscle strength (from gear 0 to 20). Please choose the appropriate gear that allows you to cycle without intense strain. It is recommended to cycle in the low gears for some time.



fig. 10

**Important:** Due to the very small pedal radius it can partially be very difficult to train actively. The larger the pedal radius is, the easier the active training.

6. **Breaks:** In case you get tired we advise you to finish your active training. The MOTomed graciele12 will recognize this and take over automatically, moving your legs passively again. After a while you can try cycling yourself again (but only if you feel able to) – the MOTomed will recognize this input and switch automatically to active mode again. The bicycle icon appears on the display ⑨ together with the feedback: "You are cycling yourself" (see fig. 10).

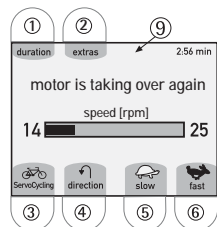


fig. 11



7. **SymmetryTraining:** The SymmetryTraining function applies only while cycling actively when the bicycle icon appears. SymmetryTraining is supposed to help you train towards an even force output of each leg by indicating the activity of both legs in a bar graph. Whenever the display shows 50% on both bars, both legs are equally active, one bar showing more than 50% however

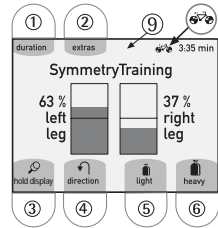


fig. 12

indicates that the corresponding leg is pedaling with more strength. Try always to train both your legs equally. You can hold the Symmetry-Training bar graphs on the display by pressing the button "hold display" (3). The button "change display" (4) brings you back to other screenshots.

8. **End of training/analysis:** Before you finish your training you are advised to have your legs moved passively again for a few minutes in order to loosen up your muscles. To stop the training press the red "start/stop" button (8) twice. By pressing the "start/stop" button only once, you are activating the pause function. Press then the button "analysis" (3) before the display (9) switches off. The analysis

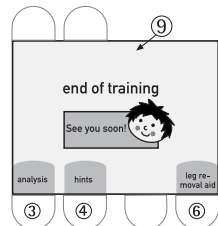


fig. 13

will show you e.g. how long you have been training with the assistance of the motor (passively) and with your own strength (actively).

9. **Removing the feet:** To remove your feet after training, press the button "removal aid" (6). Last, press again the red "start/stop" button (8) (see fig. 8) to switch off the MOTomed. Other than that the MOTomed gracile12 will automatically switch to stand-by mode.

## Short instructions arm/upper body training

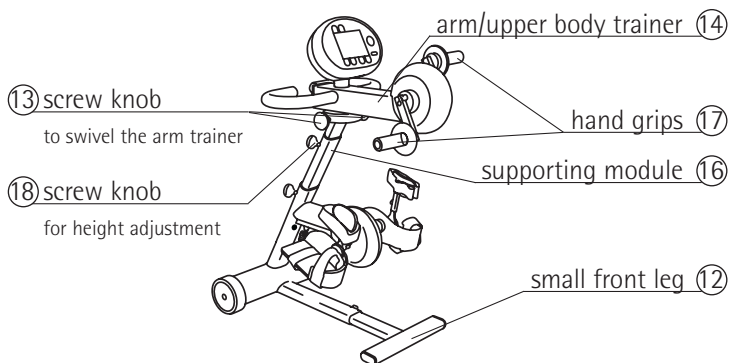


fig. 14

- Whenever you attach an *arm/upper body trainer* (14) (item no. 599) to your MOTomed gracile12 you have to extend the front leg (12) by approx. 15 cm/6 inches). However, please keep a minimum insertion of the front leg of 10 cm/4 inches) for optimal stability of the MOTomed.
- Open the two screw knobs (13) located underneath the arm/upper body trainer (14) and swivel the arm/upper body trainer (14) clockwise by 180 degrees. After that tighten the screw knobs (13) again.
- Open the screw knob (18) at the supporting module (16) and adjust it to the desired training height (after consultation of the doctor and therapist).
- Start of training:** Press the red "start/stop" button (8) (see fig. 8) and then the button "arm trainer" (3). The hand grips (17) now begin to move slowly. Let the motor move your arms passively in a short "warm-up" phase first.
- If the hands are fixed (e.g. in the forearm shells) training may only be done under supervision.
- Further instructions for arm training are very similar to the leg training (see pages 21 – 23, paragraphs 4 to 6 and 8).

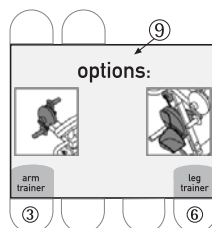

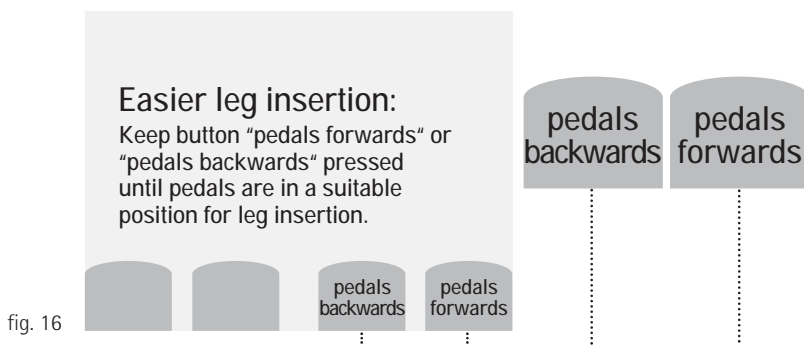


fig. 15

## Settings

### Leg insertion aid (insertion and securing of legs)

Before you start the training, you have to place your feet into the foot shells and fix them with the Velcro straps. The leg insertion aid of the MOTomed gracile12 offers the possibility to bring the foot shells into a suitable position to help you insert your legs more comfortably. Please press the blue button  ⑦ (leg insertion aid).



Press button "pedals forwards" or "pedals backwards" until the first foot shell is at the desired position. As soon as you stop pressing the button the pedals stop moving. Now you can insert and fix your first leg with the Velcro straps or *self-operating foot holders (item no. 598)* in the foot shell. After that you repeat this procedure with your other leg. The training starts as soon as you press "start/stop". **Important:** Only start your training when both your legs are inserted and fixed.

see page 62

**Suggestion:** If your legs are not equally flexible, step in first with the leg that is less flexible than the other.

For some types of wheelchairs it may be necessary to remove the foot plate or to swivel it aside in order to allow sufficient access to the MOTomed gracile12. Please adjust the correct height of the pedal axle before starting the training in order to ensure an optimal training process. However, if you decide not to train, the MOTomed gracile12 goes into stand-by mode after a few minutes.

see page 53

## Start of training

Press button "start/stop". The MOTomed gracile12 starts with a short and gentle warm-up phase.



fig. 17

The speed automatically increases to 20 rpm. Without pressing any further buttons the motor of the MOTomed gracile12 will gently move your legs in a safe way.

## Arm/upper body trainer

see page 64 If there is an *arm/upper body trainer (item no. 599)*, you will be asked to choose between arm or leg trainer (see page 24, fig. 15) before starting the training. If you choose arm/upper body training, you will have about 10 seconds to place your hands onto the handles, then the training will start. In case you want to start your training immediately, press the button "start now".

## Adjustment of speed

With the buttons "slow" (turtle) and "fast" (rabbit) you can easily adjust the speed according to your needs. You can choose any speed between 0 and 60 (rpm).

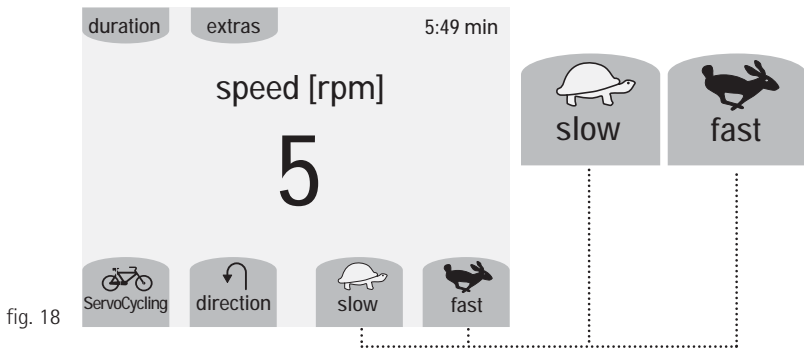


fig. 18

## Change of direction

Upon pressing the button "direction" the MOTOmed gracile12 slowly reduces the speed until it stops, changes the direction of movement and finally accelerates back up to the adjusted speed.

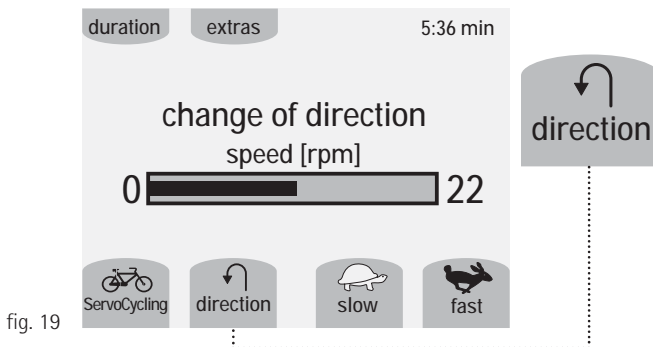
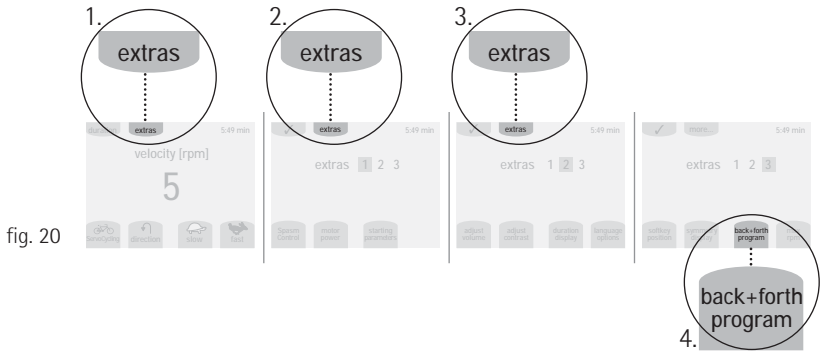


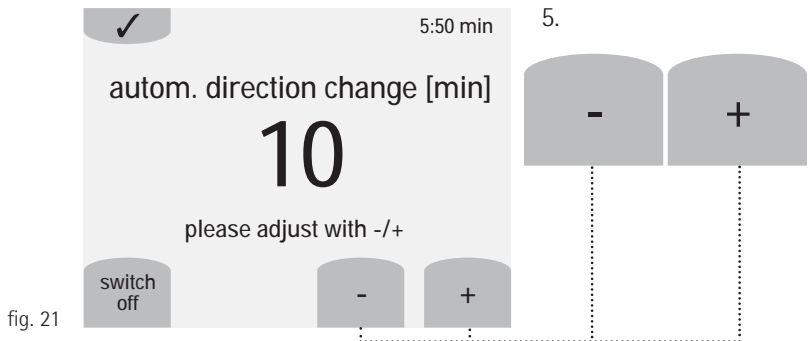
fig. 19

## Automatic direction change

With the *back+forth program* you can set a period of time after which the MOTomed gracile12 will change the direction automatically. For this press at first the button "extras" (1.), then the button "extras" (2.), once again the button "extras" (3.) and finally the button "back + forth program" (4.).



Upon pressing the buttons "-" and "+" (5.) you can set the time period for the change of direction from 2 to 30 minutes.



If you want to go back to continuous operation, please press the button "switch off". Upon pressing the button "✓" you finish this setting.

## Active cycling (with one's own strength)

Whenever you start cycling actively with your own strength, the display gives the following feedback:

"You are cycling yourself gear 5". Upon pressing the buttons "light" and "heavy" you can shift to a lower or higher gear. When you would like to get moved by the MOTomed gracile12 again, just stop cycling. The motor automatically takes over and moves your legs or arms gently.

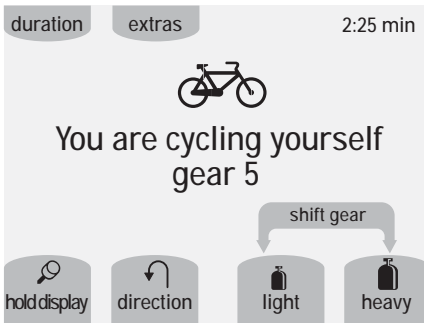


fig. 22

The MOTomed gracile12 is however not designed for continual active training at high resistance. It is not suitable for physically well trained people as a sports trainer. The manufacturer doesn't grant warranty for damages occurred due to intensive active cycling in high gears (high resistance levels).

## ServoCycling

The button ServoCycling allows you to switch to *active cycling*. This is particularly important if you don't have enough strength to immediately cycle yourself in the pre-adjusted gear 5 or if your previously set gear is too high. Press the button "ServoCycling". Now you may cycle yourself in the pre-set gear and try to accelerate the MOTomed gracile12. As soon as the bicycle icon appears on the display you are cycling with your own strength!

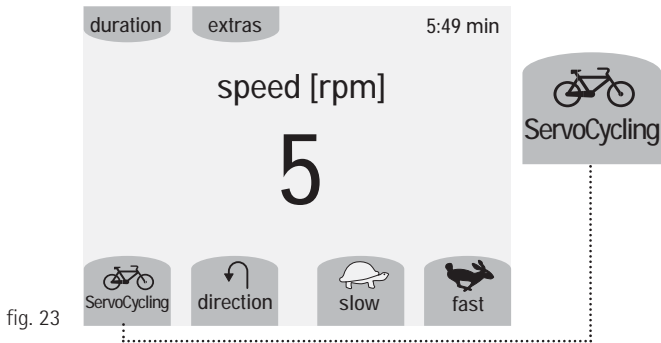


fig. 23

During *active cycling*, the operating sound might increase due to increasing speed or higher gears.

### How to shift gears when you cycle yourself

Just like using a bicycle you can shift gears by pressing the buttons "light" (small weight) or heavy (large weight). Gears range from 0 – 20. That way you can adjust the training parameters according to your needs.

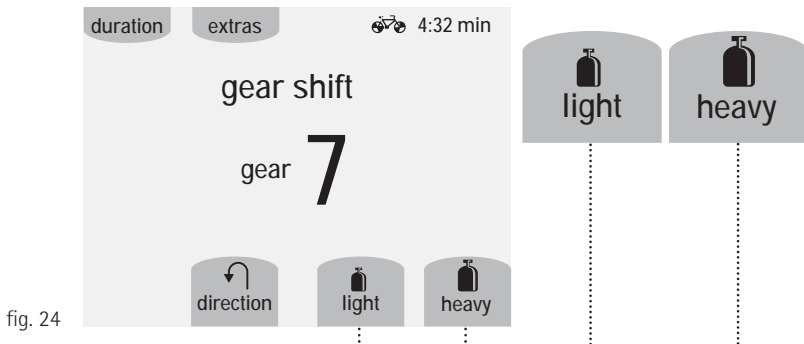


fig. 24

**Training suggestion:** Always cycle in a gear which allows you to train without exhaustion. Whenever your own strength begins to fail and you have to make big efforts you are advised to stop active cycling and change to get moved passively or to shift to a lower gear until you are able to train actively again. Don't break your limits and avoid overexertion!

**Important:** Due to the very small pedal radius it can partially be difficult to train actively. The larger the pedal radius is, the easier the active training.



## SymmetryTraining

*SymmetryTraining* is a function which you can only use while actively cycling with your own strength.

*SymmetryTraining* divides the entire individual performance into right and left leg activity, i. e. it shows the activity of the left and right leg separately. This function is supposed to help you to train towards an even force output of each leg.

You can choose between two displays as *SymmetryTraining* feedback options. The pre-set bar graph shows the activity of your two legs in two bars with the respective percentage (e.g. left leg 63 %, right leg 37 %). Whenever the display of the *SymmetryTraining* shows 50 % on both bars, the activity of the left and right leg is equal.

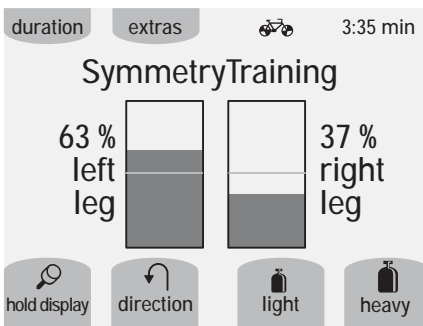


fig. 25

The one bar graph works with a ball which moves to the right or left following the more active leg. Whenever the activity of both legs is equal the ball will be exactly in the middle of the bar.

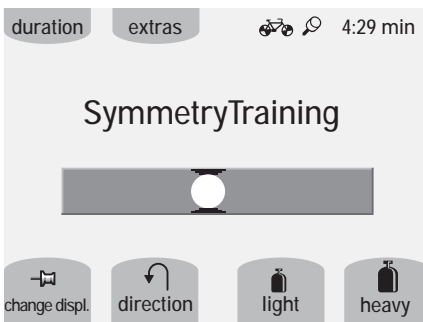


fig. 26

The displayed values are not suitable for diagnostic purposes. Due to spasticity and contractures, the displayed values are distorted. Distortion also occurs if the user isn't pushing the pedals with both legs equally but pulling with one leg while pushing with the other.

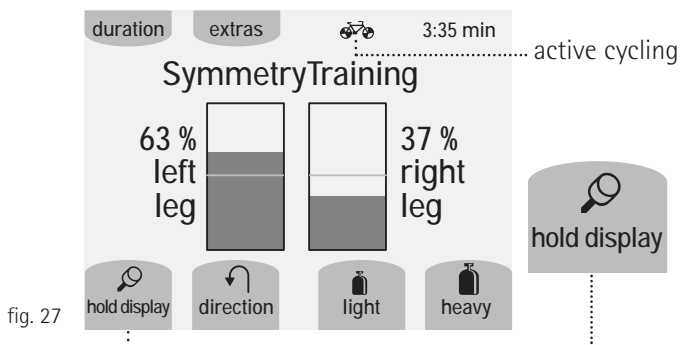
**Suggestion:** We recommend to loosen up the muscles by passive training before starting active cycling.

### How to get into SymmetryTraining?

As described above you have to start cycling yourself or to start *ServoCycling*. You can do this by simply starting to cycle with your own strength or by pressing the button "ServoCycling".

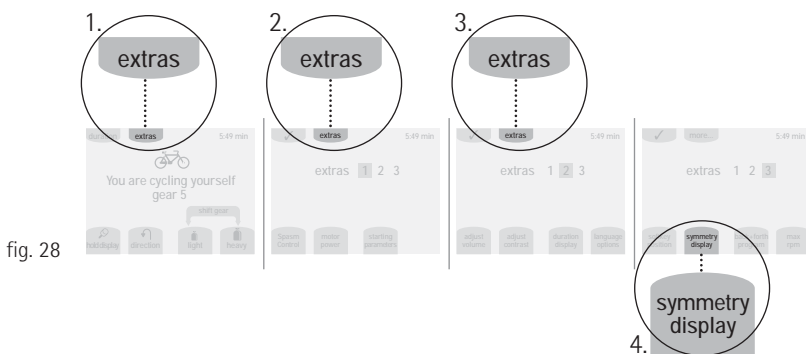
As soon as you cycle yourself, the MOTomed gracile12 will detect your impulse and respond with the bicycle icon on the display. Then, various information appears on the screen successively: **Symmetry-Training**, *duration of training, distance covered, current speed, ....*

As soon as "SymmetryTraining" appears on the display, press the button "hold display" and you hold the automatic change of displayed information in order to specifically do *SymmetryTraining*. A small pin will appear on the top of the display indicating that you are holding the display.

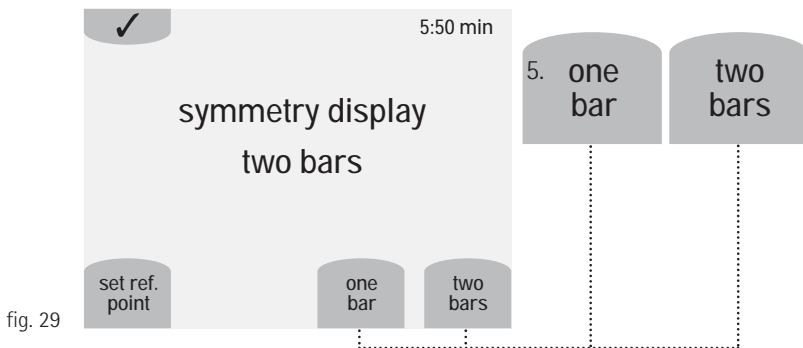


## Change of SymmetryTraining display

To change the *SymmetryTraining* display press the following buttons: Button "extras" (1.), button "more" (2.), again button "more" (3.) and finally the button "symmetry display" (4.).



Now you may choose between the one bar graph and two bar graph (5.).



By pressing the button "✓" you can close the program and save this setting.

## Change the display

A small pin (📌) on the top of the display indicates that you are holding the display. If you wish to reactivate the change of information, just press the button "change display". The "pin" symbol will disappear and various information will appear on the display successively.

see page 32

## Pause

To pause the training press the red "start/stop" button. Press the button "continue" in order to continue with your training.

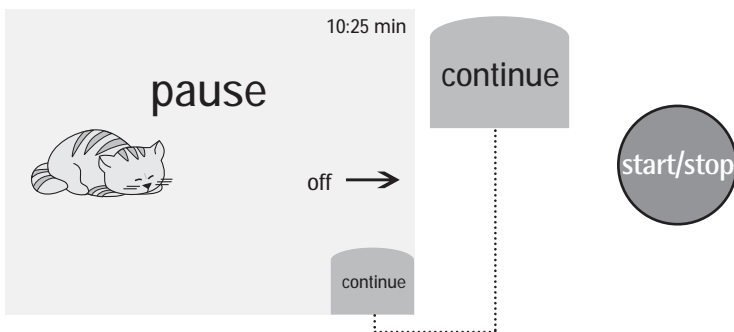


fig. 30

## End of training

The training can be finished at any time by pressing the button "start/stop" twice. The MOTomed gracile12 gently stops. After having finished the training you can use the leg removal aid to remove your feet from the MOTomed gracile12. Also, you have the option to get interesting training suggestions or a short training analysis.

## Training analysis

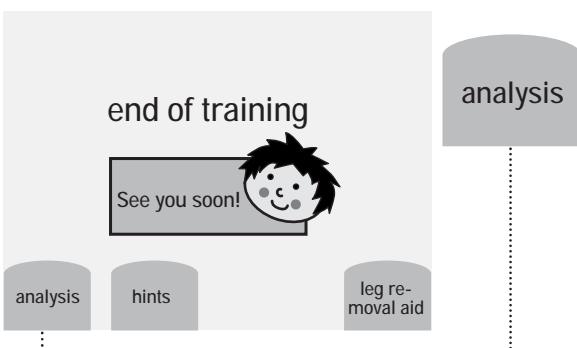


fig. 31

After you've finished the training by the "start/stop" button you can query your training results by pressing the button "analysis".

Now all training results will appear successively. In order to keep a record of all training results, you can inquire a training log.

see page 83

Upon pressing the arrow buttons you may switch between the different results:

#### duration of training

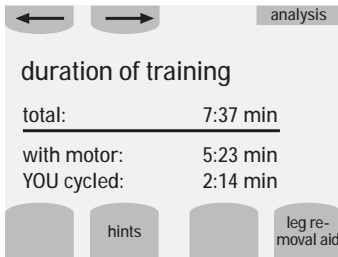


fig. 32

#### distance covered

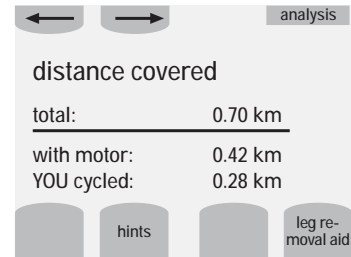


fig. 33

#### muscle tone

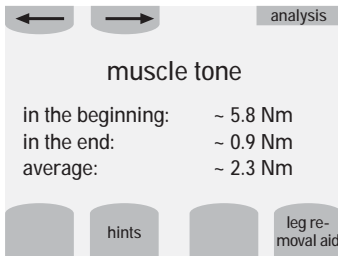


fig. 34

#### performance

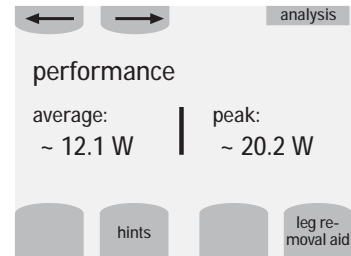


fig. 35

#### energy consumption

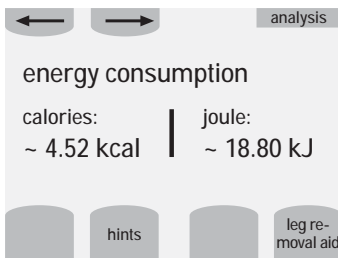


fig. 36

#### symmetry analysis

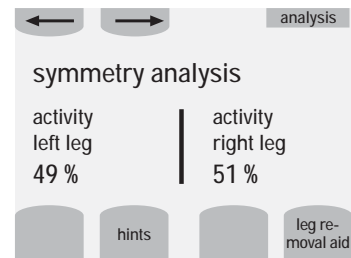


fig. 37

Please note the values shown on the display can vary slightly from the real values. They are not suitable for a diagnostic evaluation, but do give a good indication of performance and progress.

While the MOTomed gracile12 operates in stand-by mode and its display is dark you still can query the training results of your last training. You just have to press any of the 6 blue buttons around the display in order to see the analysis of the last training.

## Training suggestions

At the end of any training there are further MOTomed gracile12 training suggestions available. Just press the button "hints" to read them through.

**Remark:** The training suggestions are general advice. Please consult your doctor and therapist if they apply to your special needs as well.

## Leg removal aid

At the end of the training you can remove your legs with assistance of the leg removal aid. Press the button "leg removal aid" (1.).

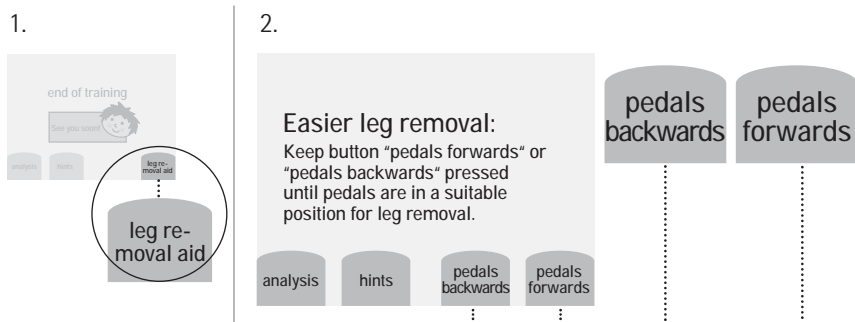


fig. 38

While you keep the button "pedals forwards" or "pedals backwards" (2.) pressed, the foot shells can be moved slowly to an appropriate position. Then you can unfasten the Velcro straps and remove your first leg from the foot shell. Just proceed in the same way to remove the other leg as well.

## MovementProtector and SpasmControl

During the training, the MOTomed *MovementProtector* constantly monitors your muscle condition. Due to this, the *MovementProtector* (the motor power) automatically adapts to your muscle condition and is therefore optimally sensitive at any time. This means additional safety, especially if your muscle stiffness changes through the course of the training with the MOTomed gracile12.

**Suggestion:** *SpasmControl* and thus also the *MovementProtector* are activated by the manufacturer. In some cases, however, it is necessary to switch them off. Please consult your doctor and therapist before doing so or call your MOTomed representative or the RECK company.

see page 81

### What to do if a spasm occurs?

As soon as the weakest spasm occurs, the *MovementProtector* stops the pedals automatically. The *SpasmControl* eases the spasm through a gentle back and forth movement of the legs. This is similar to what your therapist does.

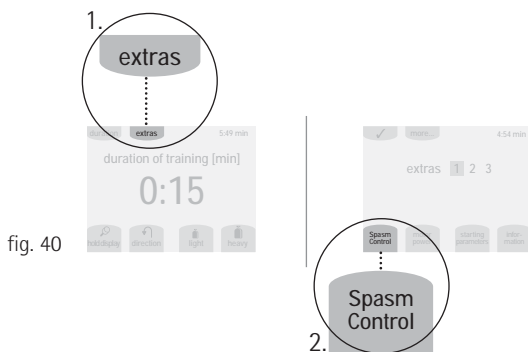


fig. 39

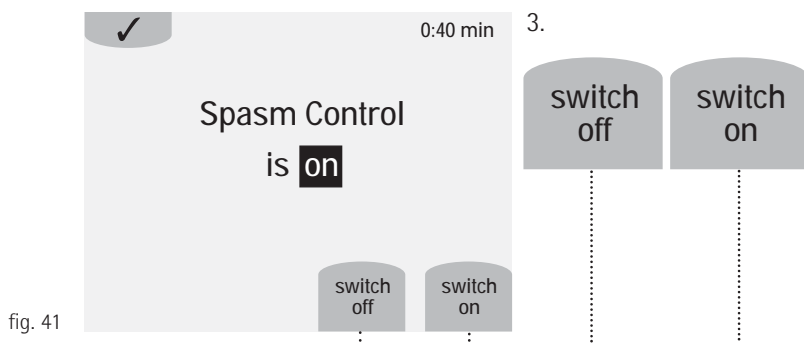
## Switch on/off SpasmControl with MovementProtector

(Hint: The *SpasmControl with MovementProtector* is activated by the manufacturer)

Press button "extras" (1.) followed by the button "SpasmControl" (2.)



To turn the *SpasmControl* on or off, press either the "switch on" button (3.) or the "switch off" button.



With button "✓" you finish this display and save what you've underlined.



## Duration of training

It is possible to pre-set the duration of your training period, similar to setting a timer. When the set training time is over, the MOTomed gracile12 stops automatically. The duration of training can be changed at all times.

### To set the duration of training

(Hint: Continuous operation is pre-set by the manufacturer)  
Press button "duration" (1).



fig. 42

Now you can set the duration of your training period by pressing the buttons "-" or "+" (2.), up to a maximum of 120 minutes.

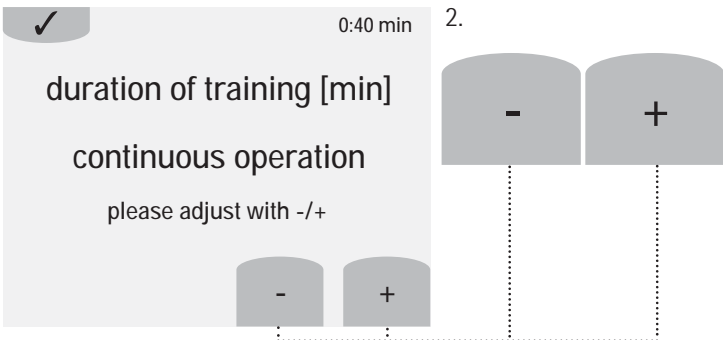


fig. 43

With the "✓" button you finish this operation and save the setting.

To change the training time again, press the "duration" (1.) button.



fig. 44

To cancel a set training period, press the button "continuous operation".

2.

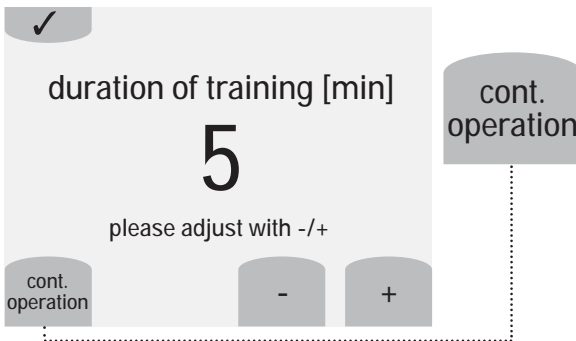


fig. 45

## Change of motor power

It is possible to adjust the maximum motor power. This is hardly ever necessary and should only be done in exceptional cases after consultation of your doctor and therapist.

## When should the motor power be reduced?

The motor power should be reduced if you are at risk of easily injuring your bones, tendons, joints and ligaments due to high motor power applied by the MOTomed gracile12 (i.e. individuals suffering from strong osteoporosis, muscle shortening etc.).

see page 13

## When should the motor power be increased?

see page 13

If your legs or arms are very stiff, they prevent the motor from performing a complete and round pedal movement. You should increase the motor power to avoid the *SpasmControl* changing the direction several times in a row. If your legs relax again during the course of the training the *MovementProtector* (the motor power) automatically adapts to the necessary motor power and is therefore always optimally sensitive.

## How to reduce or raise the motor power

Press the button "extras" (1.) and the button "motor power" (2.).

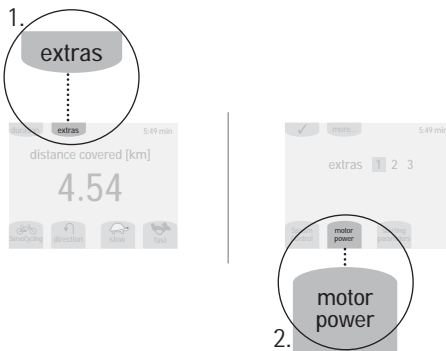


fig. 46

Now you can limit the maximum power (1.5 to 10.6 Nm) with the buttons "-" and "+" (3.).

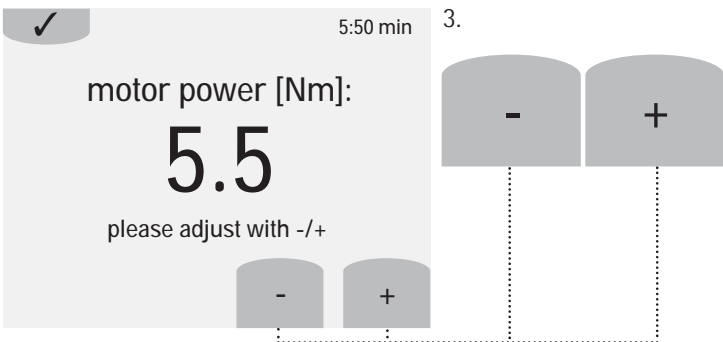


fig. 47

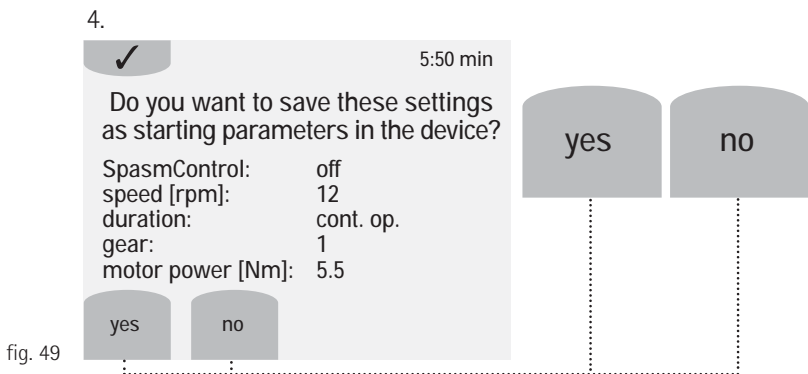
With button "✓" you finish this display and save the setting.

## Starting parameters

If you want to save the parameters (*SpasmControl*, *speed*, *duration*, *gear*, *rotation forward/backward*, *motor power*) of the MOTomed gracile12 you set individually during training proceed as follows:  
Primarily set the values that you would like to save.  
Press the button "extras" (1.), followed by the button "starting parameters" (2.) and "individual parameters" (3.).



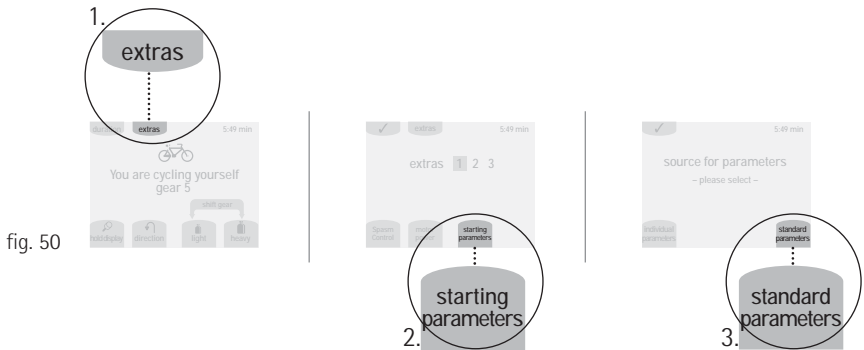
The individually set parameters (*SpasmControl*, *speed*, *duration*, *gear*, *motor power*) are displayed so that you can confirm them by pressing the "yes" or "no" button.



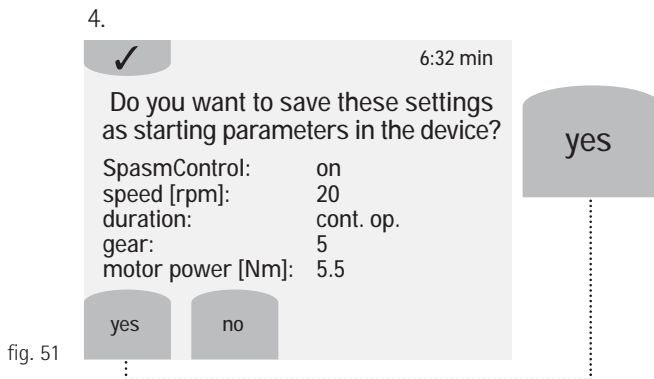
By confirming the set parameters with button "yes" they're saved as your own starting parameters for the next training sessions.

The MOTOmed gracile12 will start all following training sessions automatically with the new parameters.

If you wish to start your next training with the standard parameters set by the manufacturer, press button "extras" (1.), followed by button "starting parameters" (2.) and "standard parameters" (3.).



By confirming with the "yes" button (4.) the manufacturer's pre-set parameters are saved as starting parameters. The MOTOmed gracile12 will start all following training sessions automatically with the standard parameters.



## Adjust the contrast of the display

Through this function you can adapt the contrast of the display to the lighting conditions. Your adjustment will be saved.

Press the button "extras" (1.), followed by the buttons "extras" (2.) and "adjust contrast" (3.).

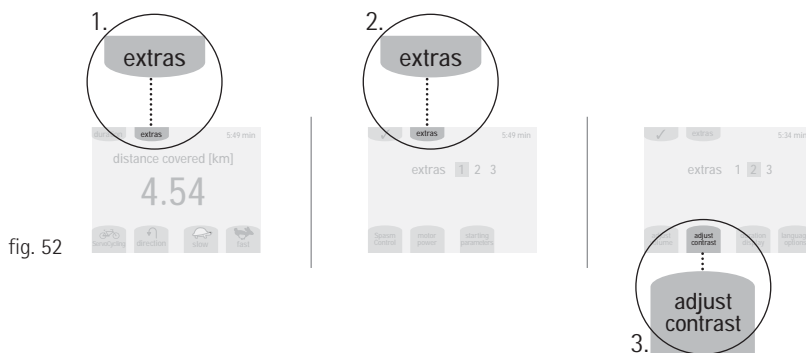


fig. 52

Now you can adjust the contrast by pressing the buttons "-" or "+" (4.).

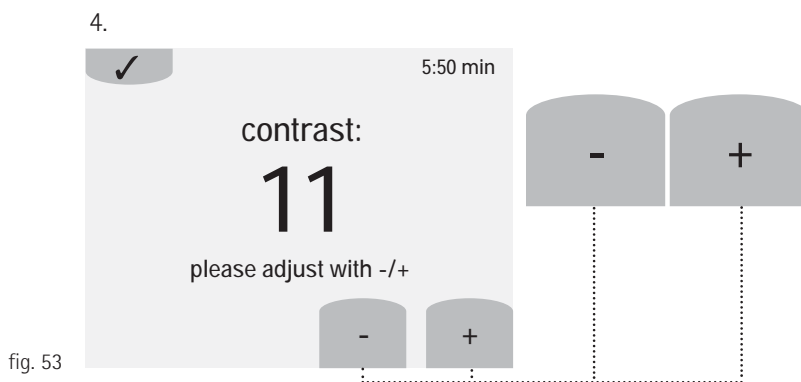


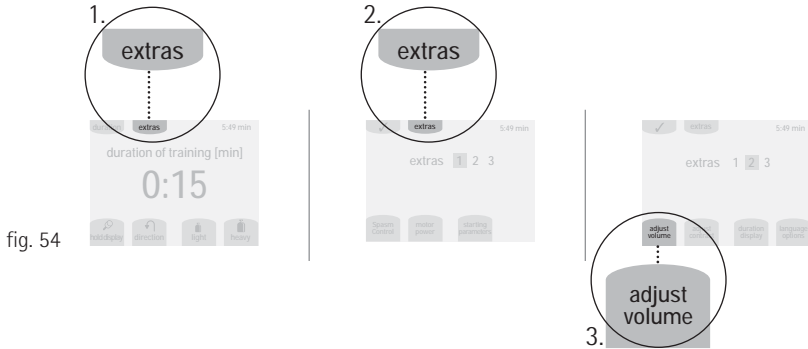
fig. 53

By pressing "✓" you save this adjustment and finish the operation.

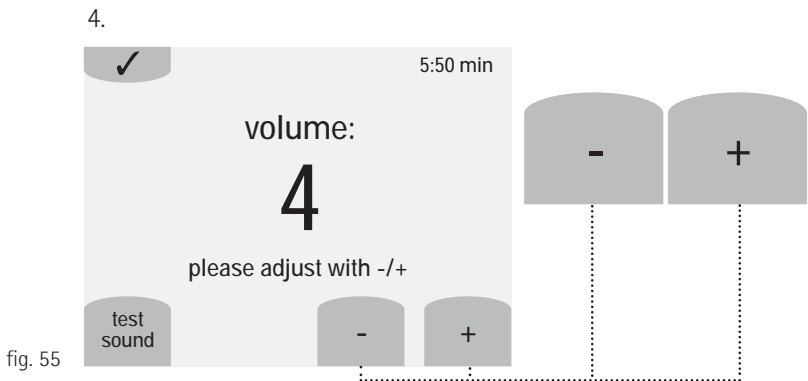
## Adjust the volume

Through this function you can adjust the acoustic feedback during pressing buttons, i.e. when choosing a gear.

Press the button "extras" (1), then the buttons "extras" (2) and "adjust volume".



Now you can adjust the volume by pressing the buttons "-" or "+" (4), "0" is without sound, "1" the minimum and "8" the maximum volume.



With the button "test sound" you can test the set volume. With button "✓" you can save the setting.

## Hold/continue displayed information

This function is only available when you *cycle actively*. It interrupts the automatic change of displayed information. That means you can hold the particular information on the display you like to work with.

Press the button "hold display".

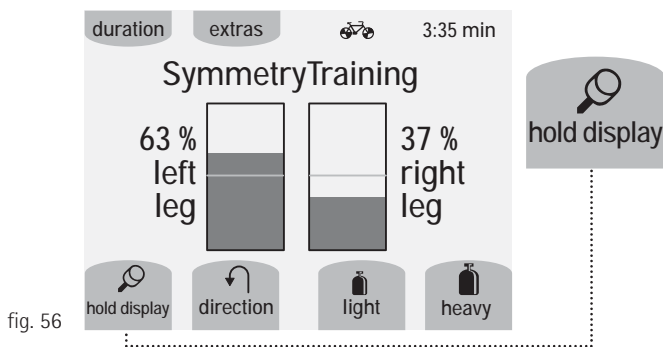


fig. 56

A diagonal pin appears on the top of the display.

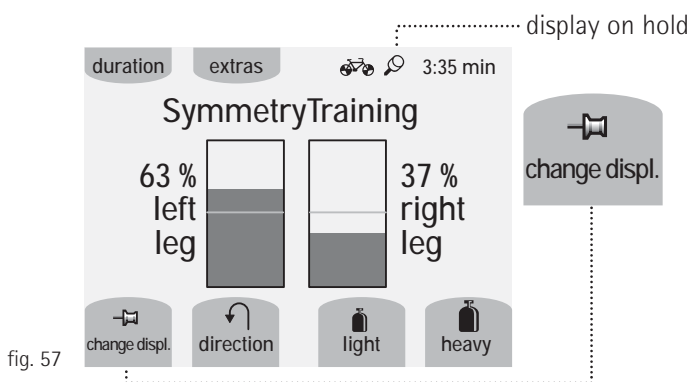


fig. 57

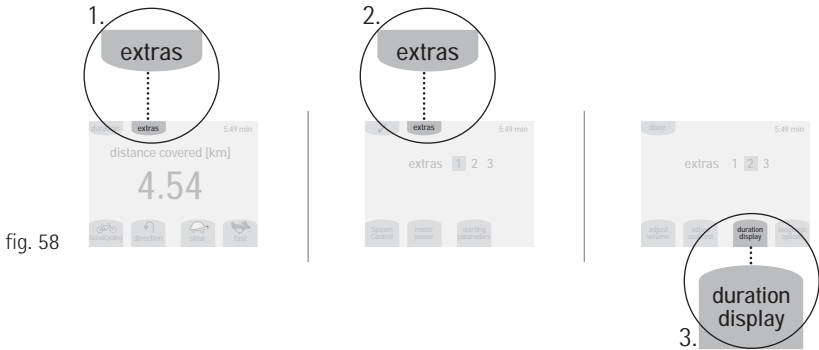
As long as the diagonal pin appears, the automatic change of the display is at rest. The current display stays on until you press the button "change display" which in turn will reactivate the automatic change of the displayed information. By pressing the buttons "hold display" (diagonal pin) and "change display" (horizontal pin) successively, you can flip through the different displays.



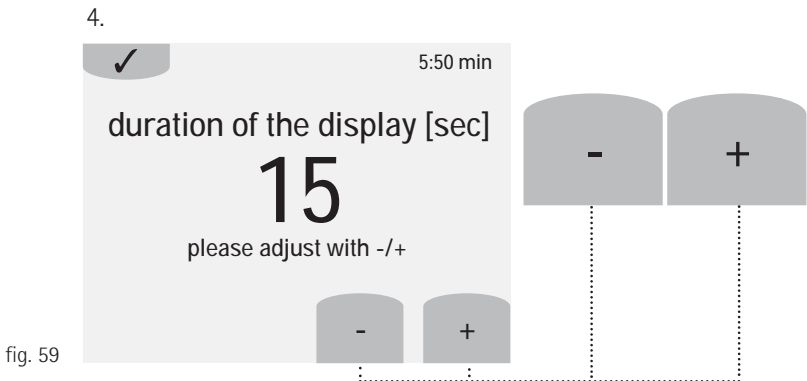
## Change of duration of displayed information

Displayed information during the MOTomed training changes at certain intervals (the manufacturer's setting is 15 seconds). You can change these intervals, i.e. you can make the displayed information change faster or slower.

Please press buttons "extras" (1.), then "extras"(2.) and "duration display" (3.).




Now you can use the buttons "-" and "+" (4.) to set the duration of the displayed information according to your needs. You can choose between 5 to 25 seconds. This value will be saved.



Finish this operation and save this adjustment by pressing "✓".

## Button lock on the operating panel

The button lock function can be activated to avoid changing set parameters during training. While training please press quickly 3 times the long blue button  ⑦ (leg insertion aid) beneath the red "start/stop" button. An activated button lock is indicated by a key icon on the top of the display.

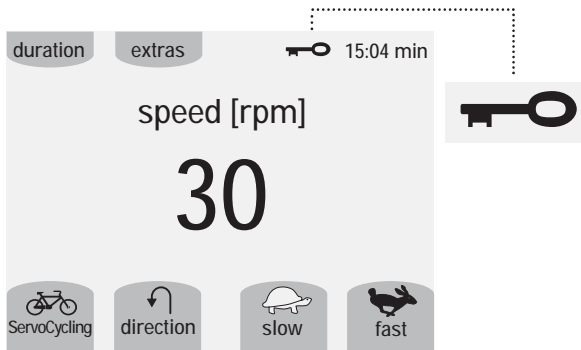



fig. 60

In order to switch off the button lock press the button  ⑦ (leg insertion aid) again 3 times. If you wish to train with locked parameters you always have to activate the button lock at the start of your training. You always can switch off the MOTomed gracile12 with the red button "start/stop", even if you train with locked parameters.

## Maximum speed

The *maximum speed* function allows you to limit the speed that should not be exceeded during active training. This can be necessary while using an ankle joint adjustment or doing the *SymmetryTraining*.

To set the *maximum speed* press buttons "extras" (1.) button, then "extras", press "extras" a second time and finally press the "max rpm" (4.).

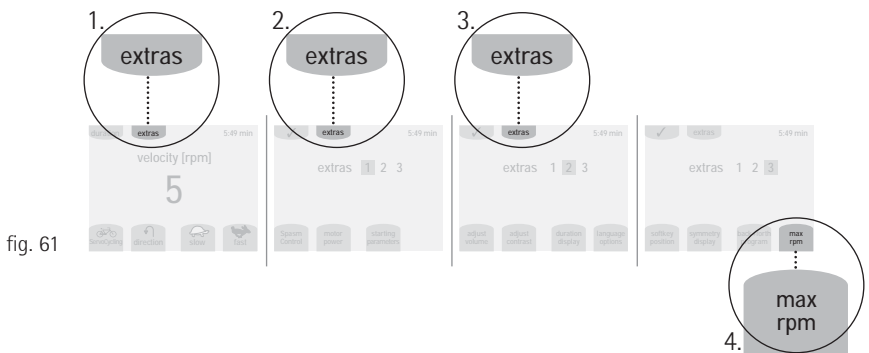


fig. 61

Now you can set the maximum speed with the buttons "-" and "+" (5.), save this adjustment and finish the operation by pressing the button "✓".

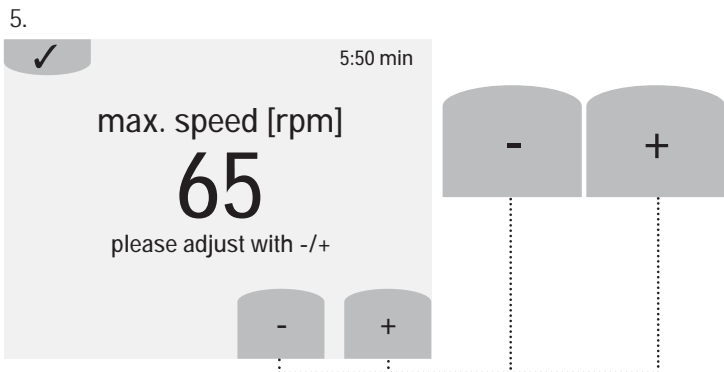
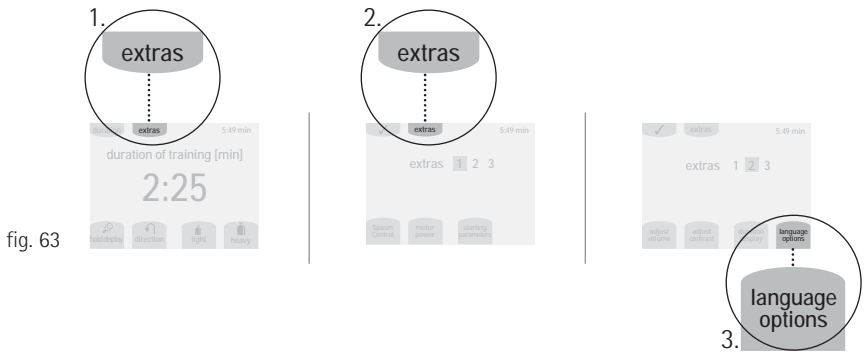


fig. 62

## Language option

The language option function allows the selection between a wide range of available languages. All functions and visual feedback will be displayed in the selected language.

Press the button "extras" (1.), then the button "extras" (2.) and then the button "language options" (3.).



Now you can select and save the desired language over the corresponding blue function button (4.). Further languages can be viewed and selected via the button "more..."



- 52 **Distance between foot shells**
- 53 **Height adjustment of the pedal axle**
- 54 **Pediatric safety foot shells**
- 55 **Pediatric leg guides with calf shells**
- 56 **Handlebar**
- 58 **Pedal radius adjustment (2 levels)**

## Distance between foot shells of only 12 cm/4.8 inches

Children frequently have very narrow hip positions. Due to this physical condition it is important to avoid malpostures of the knee and hip joints.

The distance between the inner rims of the foot shells is only 12 cm/ 4.8 inches so that even children with very narrow hip and leg positions can perform an optimal movement therapy.

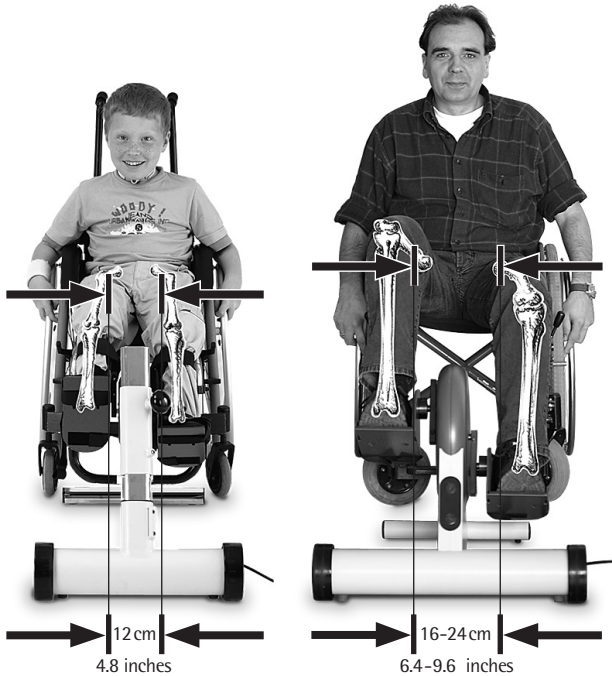


fig. 65

MovementTherapyDevices  
MOTOmed gracile12 for children

MovementTherapyDevices  
MOTOmed viva for adults

## Height adjustment of the pedal axle ranging from 26 to 46 cm/10.4 to 18.4 inches (from the ground)

The MOTOmed gracile12 is the first and unique MovementTherapyDevices for children with adjustable pedal axle and foot shell height. Thus, an adjustment to the needs of children (leg length, wheelchair and seating cushions, etc.) is possible. This adjustment can be made without tools in seconds.

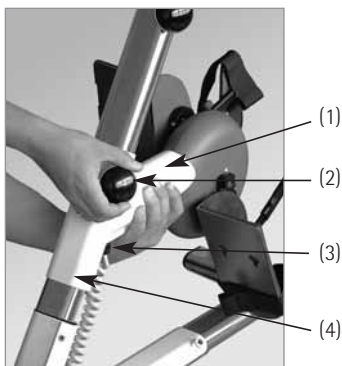


fig. 66

**Caution:** This adjustment should be carried out before starting the training.

1. Stop the pedal movement of the MOTOmed gracile12.
2. Remove the legs from the pediatric foot shells.
3. Hold the body of the machine (1) firmly.
4. Loosen the screw knob (2).
5. Pull the snap button (3) and adjust the MOTOmed gracile12 to the suitable height (4).
6. Tighten the screw knob (2) after the adjustment securely.

## Pediatric safety foot shells

The pediatric foot shells (inside measurement: width: 10.5 cm/4.2 inches, length: 21.7 cm/8.7 inches) are softly padded and have a large rim for support as well as for foot and ankle protection.



fig. 67

The pediatric foot shells allow secure hold of the feet. This is particularly important with (complete) paralysis and spasticity.

The high safety rim supports fixing the feet and protects against the rotating pedal crank at the same time. The specific padding allows a comfortable and slip-proof training.

The pediatric foot shells come as standard with Velcro straps at the ankle and toe level.

**Important:** Foot shells can be individually adjusted to your needs, e.g. with outward rotation, height adjustable etc. The employees of the RECK company will be pleased to assist you.

see page 81



## Pediatric leg guides with calf shells

The pediatric leg guides (fig. 68) at the safety foot shell are movable and spring-mounted so that the ankle joint movement is possible. This is important as the calf-muscle pump in the legs can increase the speed of the blood flowing back to the heart. The calf shells are formed in a way that an easier fixation to the shells is possible. Due to their flexible form they can adjust to the lower leg.

Don't adjust the calf shells too high; they must not touch the lower legs. The calf shells need to rest against the calves for an optimal guidance and hold of the legs (fig. 69). Loosen the wing screw and adjust the height accordingly. Make sure that the minimum insertion depth of 3 cm/1.2 inches is maintained. As soon as you have fixed the feet into the foot shells, you need to tighten the Velcro straps around the calves.

**Caution:** Make sure that the Velcro straps are securely tightened. Pay attention to the safety precaution.

see page 86

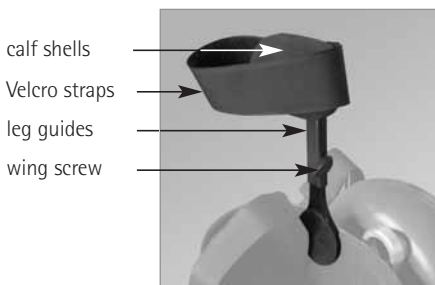


fig. 68

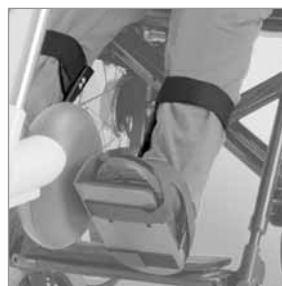


fig. 69

Possible noises can be eliminated by tightening the wing screw for the height adjustment of the calf.

## Handlebar

- for holding on during the training
- integrated, well reachable operating panel with large screen
- height adjustable from 66 to 92 cm/26.4 to 36.8 inches (from the ground)
- horizontal adjustable 8 cm/3.2 inches (in the distance to the user)



fig. 70

The handlebar supports a secure hold during the training, particularly in case of strong spasticity, balance problems and for *active training*.

Please ensure that you do not place too much weight on one side of the handle i.e. when standing up: do not prop yourself up on one side of the handle since this could cause the MOTomed gracile12 to tip over.

For hygiene reasons, the handlebar covering is washable and can also be disinfected with regular disinfectants.

## Height adjustment of the handlebar

1. Hold the handlebar (5) securely.
2. Loosen the screw knob for the height adjustment (6).
3. Adjust the handlebar of the MOTOmed gracile12 to the suitable height (7).
4. Tighten the screw knob (6) after the adjustment securely again.

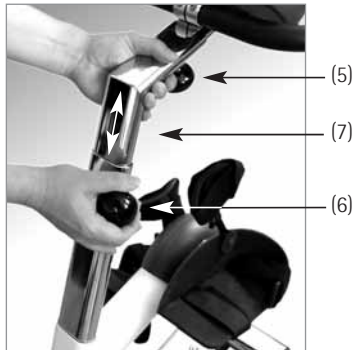


fig. 71

## Horizontal adjustment of the handlebar

1. Hold the handlebar (5) securely.
2. Loosen the screw knob for the horizontal adjustment (8).
3. Adjust the distance of the handlebar (9) to the user.
4. Tighten the screw knob (8) after the adjustment securely again.

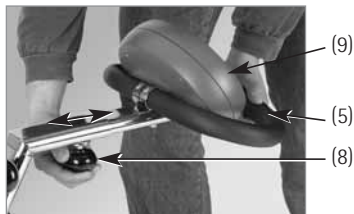


fig. 72

## Pedal radius adjustment (2 levels)

- The pedal radius can be decreased (3.5 cm/1.4 inches) and increased (7 cm/2.8 inches) with an Allen key within seconds.



fig. 73

### Adjustment of the pedal radius

**Caution:** The set-up or adjustment of the pedal radius may only be carried out in the inactive mode and without inserted legs.

1. Stop the pedal movement of the MOTomed gracile12.
2. Remove the legs from the pediatric foot shells.
3. Open the Allen screw (10) of the pedal radius adjustment (2 levels) (11).
4. Take the pediatric foot shell (12) off the pedal radius adjustment and change the pedal radius (11) accordingly.
5. Tighten the Allen screw (10) securely again.
6. Repeat this procedure on the other side. Please make sure that the same pedal radius is adjusted on both sides.
7. Please make sure again that the Allen screws (10) on both sides are securely tightened.

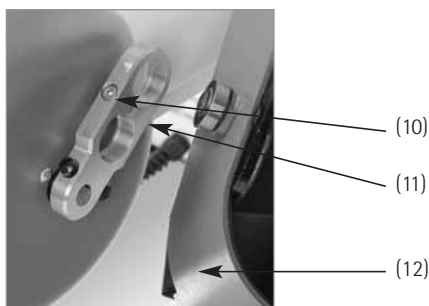


fig. 74

## Remarks to the adjustment of the pedal radius

1. Tighten the Allen screw (10) on the ball bearing tension ring (15) firmly so that the foot shell (12) cannot detach from the ball bearing tension ring (15).
2. Tighten the Allen screw (10) only so firm that the foot shell (12) can still be rotated.

**Procedure:** Hold the foot shell (12) in horizontal position and let it off. If the foot shell swings approximately 1-2 times and stops then, the Allen screw is tightened correctly.

If the Allen screw (10) is tightened too firm, the ball bearing tension ring (15) can press too strong against the ball bearing (16) of the foot shell (12) so that it can hardly or not be moved and rotated any more.

3. **Caution:** Falsely tightened Allen screws (10) on the ball bearing tension ring (15) cannot cause claims or consequential costs for the company RECK-Technik GmbH & Co. KG.

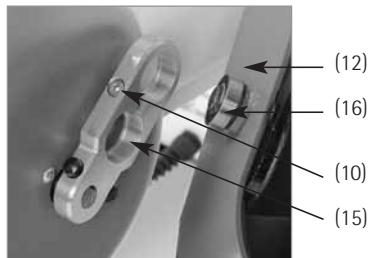


fig. 75

In case you want to change the pedal radius frequently, we recommend see page 63 the accessory *pedal radius quick adjustment (3 levels) (item no. 588)*.



- 62 Self-operating foot holders
- 62 Safety foot shells with adjustable side rim
- 63 Pedal radius quick adjustment (3 levels)
- 64 Arm/upper body trainer with motor
- 66 Pediatric forearm shells with arm cuffs
- 67 Handlebar variations
- 68 Wheelchair stabilizer
- 69 Chair fixation with stabilizer
- 69 Knee bending aid
- 70 Safety foot shells for adults

Item no. 598 **Self-operating foot holders**

- soft foam rollers gently and securely fix the feet for a firm hold even during strong spasms
- for inserting and removing legs quickly and easily without any extra help



fig. 76

If you have difficulty positioning your feet with the standard Velcro straps we recommend using the self-operating food holders. They help you to fasten and remove your feet easily and independently. This is of special advantage if the desired urge to use the toilet occurs while training with the MOTomed gracile12.

Open the foot holders and insert your feet. After that, lift the foot holder first up and then aside to place the rubber roll properly. Last you fix it with the operating handle (feel a clear pressure).

Item no. 597 **Safety foot shells with adjustable side rim**

- can be mounted to the outside of the foot shell
- prevents the foot to slip to the side
- foot shell rim can be outward rotated by 2 cm/0.8 inches

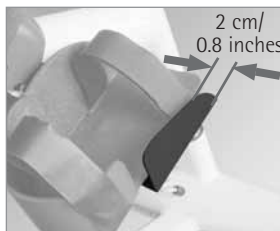


fig. 77



## Pedal radius quick adjustment (3 levels)

- for quicker adjustment of the pedal radius
- adjustable in 3 levels (from 6 to 11.5 cm/2.4 to 4.6 inches) or stage-less
- when mounted to the MOTomed gracile12, the distance between the inner rims of the foot shells broadens by 2 cm/0.8 inches in total

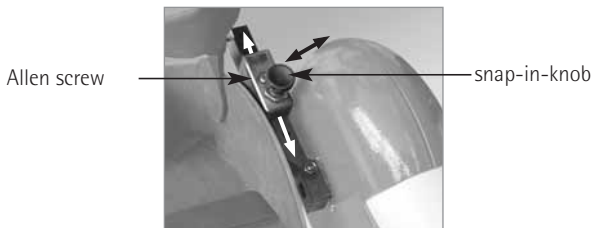


fig. 78

Please follow these steps when changing the pedal radius:

1. First stop the pedal movement of the MOTomed gracile12 by pressing the red "start/stop" button twice.
2. Remove legs from the pediatric foot shells.
3. Pull out the mains plug.
- 4a. By pulling up the snap-in knob the pediatric foot shell can be slid along the pedal crank and can be set at any one of the 3 positions/levels (primarily loosen the Allen screw). You can find an Allen key at the bottom of the device.
- 4b. Stage-less adjustment: Using the Allen screw the foot shells can be set at any position on the pedal crank.
5. Repeat this process on the pedal crank of the other side.  
Please make sure that you set the same pedal radius on both sides.
6. Plug the MOTomed in again at the mains socket (electrical outlet).

**Note:** Loose Allen screws may cause noise. After tightening the Allen screw the noise should cease. We recommend tightening the Allen screws on a regular basis.

Item no. 599

## Arm/upper body trainer with motor

- can be swivelled in and out of the training area (no tools required): absolute leg room when training the upper part of the body
- with integrated handlebar
- ideal training height can be adjusted without tools
- for passive (with motor) and active (with resistance levels) training



fig. 79

see page 16

Before using the arm/upper body trainer it is important to pull out the front leg about 15 cm/6 inches (ensure a minimum insertion of 10 cm/4 inches). This improves the stability of the MOTOMed gracile12 necessary for the arm training.

Please ensure that you do not place too much weight on one side of the handle i.e. when standing up: do not prop yourself up on one side of the handle since this could cause the MOTOMed gracile12 to tip over.

You can do both active and passive training with the arm/upper body trainer.



fig. 80

- 1 leg training
- 2 stop
- 3 swivel the arm/upper body trainer
- 4 start
- 5 arm/upper body trainer

The integrated handlebar of the arm trainer can be used to hold onto during leg training. To do arm training, please take the legs off the foot shells and swivel the arm/upper body trainer clockwise by 180 degrees. Please follow these steps:

- see page 24
1. Open the screw knob ⑬ on the underside of the arm/upper body trainer and turn it clockwise by 180 degrees. Tighten the screw knob securely again.
- see page 24
2. In order to adjust a suitable height of the arm/upper body trainer, please open the screw knob ⑱ at the supporting module, adjust it to the desired height and tighten the screw knob again. Please ensure a minimum insertion of 10 cm/4 inches!

After you have removed your legs from the foot shells you can start the arm/upper body trainer by pressing the "start/stop" button and then choosing "arm training".

**Important:** Please make sure that your arms are not stretched out completely; the elbow joint should always be slightly bent. The arm trainer has to be fixed at chest level or slightly below. For your optimal seating position please consult your therapist and doctor.

**Hint:** The body has the tendency to slump over, especially in the case of elderly people. Backward arm training encourages a more upright posture. Regular backward arm training is recommended as part of your training program.

Item no. 556K

## Pediatric forearm shells with arm cuffs

- firmly fasten and guide the arms, suitable for strong paralysis, with padded arm cuffs.
- laterally movable in order to adjust to the natural movement of the forearm.



fig. 81

see page 64

The forearm shells can only be used in combination with the *arm/upper body trainer (item no. 599)*. They are required if the arms need support and guidance due to paralysis. In order to allow some lateral mobility for the forearms, the shells have a pivot for horizontal movement.

The position of the cross grip/hand rest of the forearm shell can be adjusted in all directions by loosening the wing screw (please ensure a minimum insertion of 2.5 cm/1 inch). Tighten the wing screw after the operation.

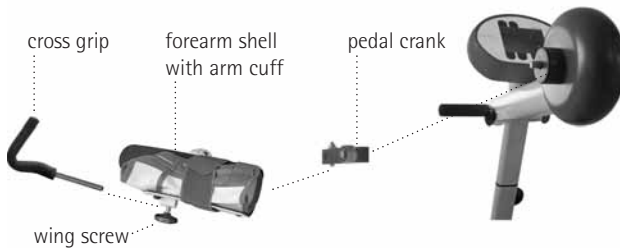
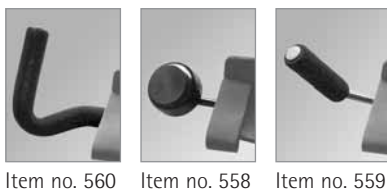


fig. 82

The grip range for forearm shells consists of three different models: *cross hand grips (item no. 560)*, *ball-shaped hand rests (item no. 558)* and *vertical hand grips (item no. 559)*.

fig. 83



**Caution:** It is important to make sure that the hands (and fingers) are fixed in a way that they cannot touch the pedal cranks. Training with forearm shells **may only be done under supervision.** For retrofit of the forearm shells, please open the Allen screw at the ball bearing. You find an appropriate Allen key at the underside of the MOTomed gracile12. Don't forget to tighten the Allen screw again after having put on the forearm shells.

## Item no. 595 **Handlebar variations**

### **Racing car segment handle**

- can be rotated (60°)
- can only be mounted to the handlebar (basic model)

fig. 84



Item no. 596 **Racing car steering wheel**

- can be rotated (360°)
- adjustable in height and inclination
- can only be mounted to the handlebar (basic model)



fig. 85

Item no. 8 **Wheelchair stabilizer**

The wheelchair stabilizer protects the wheelchair from tilting or slipping away during active training or due to an occurring spasm.



fig. 86

When the wheelchair is in the right position, place the stabilizer behind the wheelchair and adjust the height in a way that the upper crossbar of the stabilizer fits right underneath the push handles of the wheelchair.

In order to do this, you will need an assisting person. The wheelchair stabilizer is suitable for most conventional wheelchairs.

Item no. 511 **Chair fixation with stabilizer** for MOTomed viva1/viva2

The chair fixation with stabilizer enables the user to train safely and securely from a normal chair. Especially recommended for users with strong spasticity and for those training actively.



fig. 87

Upon request the chair fixation with stabilizer can be adapted to the MOTomed gracile12.

see page 81 Please call us if you have any questions.

Please make sure that the chair fixation with stabilizer is secured firmly to the MOTomed gracile12. Both front legs of the chair must be secured inside the chair fixation and the back legs must be standing on the floor plate.

Item no. 584 **Knee bending aid**

- if the user tends to stretch the knee almost entirely or trains in a lying position (e.g. because of strong spasticity)
- prevents an overstretching and blocking of the knee joints
- knee relief individually adjustable on both sides



fig. 88

Item no. 586 **Safety foot shells for adults**

- for adults and teenagers with bigger feet
- internal measurement: Width: 13 cm/5.2 inches, length: 24 cm/ 9.6 inches
- calf shells can be mounted



fig. 89

**General information:**

Additional accessories are described in the current product overview.  
see page 81 Also individual adaptations can be carried out. Please contact your  
MOTOmed representative or the RECK company, see chapter "service".



- 72 **Safety instructions for troubleshooting**
- 72 **The MOTomed gracile12 is jerky, runs unevenly or makes noises**
- 73 **The MOTomed gracile12 does not work at all or the operating panel does not react**
- 73 **Error messages**
  - 73 Overheating
  - 73 The motor locks
  - 74 Neither arm trainer nor leg trainer is detected

## Safety instructions for troubleshooting

Only authorized qualified personnel is allowed to carry out repair works on the MOTOmed gracile12. For safety reasons it is crucially important that the device is completely disconnected from the power supply.

see page 81 In case of a malfunction that isn't listed below or if you have any questions, please refer to the RECK customer service department.

Upon requirement the RECK company can provide further technical documentation in order to support the authorized qualified personnel regarding adjustments, repair and maintenance.

### The MOTOmed gracile12 is jerky, runs unevenly or makes noises

Please check the following points:

1. Are the wing screws of the leg guides securely tightened?
2. Is the pedal radius set to the same level on both sides?
3. Is the pedal radius set at a level too large for the level of mobility of the user? This leads to an uneven user dependent run.
4. Are all Allen screws of the pedal radius quick adjustment tightened correctly?
5. Please check your sitting position and posture in front of the MOTOmed gracile12. You should sit upright and in a straight alignment with the MOTOmed gracile12. The distance between you and the MOTOmed should be such that the legs do not over-extend and the knee joints don't lock.
6. For hemiplegic patients, the pedal movement may be uneven due to the different right/left body functions (especially when using a low gear).

## The MOTOmed gracile does not work at all or the operating panel does not react

Please check whether the operating panel is mounted correctly and whether the mains cable is plugged correctly into the wall socket and into the MOTOmed gracile12.

Check also the function of your wall socket (by plugging in any other electric device).

### Error messages

#### Overheating

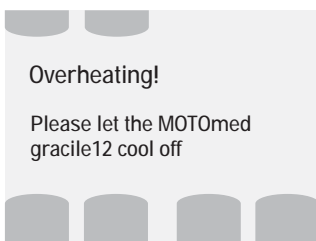


fig. 90

The MOTOmed gracile12 overload detection is responding. Please wait several minutes until the motor has cooled down and the buttons of the operating panel react again. If overheating occurs twice, please interrupt your training for approx. two hours in order to let the motor cool down completely.

#### The motor locks



fig. 91

This error message appears as soon as the SpasmControl is activated.

see page 40 30 times at short intervals or if the motor was locked for a period of 3 minutes. Please pull the mains plug out of the plug socket and put it in again. Then please check if the motor power is adjusted too low or if the pedal radius is adjusted too high in relation to your condition.

### Neither arm nor leg trainer is detected



fig. 92

see page 17 This error message appears if the pedals are moved before the MOTOMed gracile12 is ready for starting up (the green small lamp at the operating panel must burn permanently). Please pull the mains plug out of the plug socket, put it in again and wait until the green light at the operating panel is burning permanently.

# Cleaning and care

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Before cleaning the MOTomed gracile12, the device must be unplugged from the mains (electric outlet) so that the power supply is completely disconnected.

Clean the surface of your MOTomed gracile12 only with a soft and dry cloth. It is absolutely crucial that no water enters the device.

If several users use the MOTomed gracile12, please disinfect the handlebar and the operating panel with a suitable disinfectant.

Never use caustic, corroding or solvent cleaning agents. Clean around stickers attached to the MOTomed gracile12 so that they don't get damaged.



# Technical specifications, symbols

## Measurements and weight (basic model)

Height:	100 cm/40 inches
Width:	48 cm/19.2 inches
Depth:	52 cm/20.8 inches
Operating panel:	11.3 x 8.5 cm/4.5 x 3.4 inches
Weight: leg trainer	25 kg/55 lb
leg and arm trainer	35 kg/77 lb

## Power requirement

Europe:	220 - 240 V ~/50 - 60 Hz, 0,56 A
USA, Canada:	110 - 120 V ~/50 - 60 Hz, 1,0 A
Japan:	100 - 110 V ~/50 - 60 Hz, 1,0 A
Other countries:	according to country specifications, consider the marking

## Power consumption

Non-operating:	max. 7.5 VA
Operating:	max. 185 VA

## Ambience conditions

Operation:	0° to +40°C/32 to 104°F
Storage:	-20° to +60°C/4 to 140°F
Humidity:	≤ 85 % relative, not condensing

**System of protection:** IPX0

**Class of protection:** I, Type B

**Class of medical products  
according to MPG:** II a

According to IEC 601-1, all poles switch off of the MOTomed gracile12 is ensured by pulling the mains plug.

## Signs and symbols on the marking



Applied part type B

Applied parts are parts which are in contact with the user during normal use and which are therefore subject to special safety criteria.



General warning sign



Attention! Follow operating instructions



**MEDICAL ELECTRICAL EQUIPMENT**  
WITH RESPECT TO ELECTRICAL SHOCK  
FIRE, AND MECHANICAL HAZARDS ONLY  
IN ACCORDANCE WITH UL60601-  
1/CAN/CSA C22.2 No. 601.1  
40FF



The MOTomed gracile12 meets the standards for medical devices 93/42/EWG



Construction year of the MOTomed gracile12 (e.g. 2006)



Environment-friendly waste disposal



Serial number



# Warranty

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The RECK company offers a warranty on material and manufacturing faults of 12 months on the MOTOmed gracile12 valid as of day of delivery or invoice date.

During the 12 months warranty period the RECK Technik GmbH & Co. KG grants replacement of defective parts of the MOTOmed gracile12 at no cost or repair of the device at the company premises or by an authorized MOTOmed representative/technician at no cost, provided that:

1. the parts are not damaged due to normal wear and tear.
2. repairs have only been effected by personnel authorized by the RECK company who have special knowledge, training and the necessary means for a proper implementation.
3. only RECK parts have been fitted to and used with the MOTOmed gracile12 – no modifications have been made.
4. the MOTOmed gracile12 has been used in accordance with the instructions and safety precautions listed in the instruction manual and has not been used inappropriately.
5. the failure is not due to wanton destruction, abuse, neglect, improper maintenance or unapproved modifications.
6. the warranty claim has been asserted within the fixed period of time and on presentation of a receipt which certifies the purchase of the MOTOmed gracile12.

10

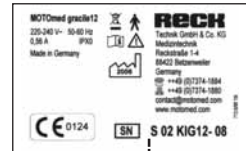
## Recycling

The MOTOmed gracile12 is a high-quality all-metal construction: it is long lasting, environmentally compatible and recyclable. Most parts can be recycled via scrap-metal recycling. The remaining electronic parts can be disposed of via electronic industrial waste.



# Service

Should you have any questions please call us and we will gladly return your call. Please have the serial number of your MOTomed gracile12 available, which you can find on the marking on the large tube.



**SN** **S 02 KIG12-08**

Manufacturer:

Distributor:

RECK-Technik GmbH & Co. KG  
Medizintechnik  
Reckstrasse 1-5  
88422 Betzenweiler, Germany

Customer service (export):

Edith Lohner                      phone: +49 7374 18-481  
  fax:        +49 7374 18-480  
  e-mail:  info@motomed.com

It is important for us to constantly improve our products. In order to do this, we need to hear about your experiences with the MOTomed. We would therefore appreciate your feedback. Please contact us on the telephone number above, or in writing by email or fax, either to us or to your MOTomed representative.

If you have friends or family to whom you would like to recommend the MOTomed gracile12, we are always happy to send information about our various MOTomed MovementTherapyDevices, either to you or directly to your friends – at no cost and with no obligation.



# Safety precautions

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see page 26 The first time use of the MOTOMed gracile12 must always be supervised by a qualified person giving instructions. Assessment of MOTOMed training in regard to your health situation as well as the time, duration and intensity of the training periods have to be discussed with your doctor and physiotherapist before you start the training. Please pay attention to the preset adjustments of the MOTOMed gracile12 when switching it on.

Either the patient is conscious or a therapist must be present during the training.

see page 42 Warm-up: If the health condition of a patient doesn't allow MOTOMed training with the maximum speed of 15 rpm the parameter "speed" of the starting parameters has to be reduced after the start.

The use of the MOTOMed gracile12 is to be adapted to individual health conditions. Training suggestions by the manufacturer or its distributors are given without guarantee. No exact instructions can be given for the use of the MOTOMed gracile12 in different health situations. This applies as well to details of the training functions as their settings have to be adjusted to age, height, individual situations, post-surgical health conditions and the general fitness of the user.

see page 40 If there is any risk of damaging or causing injury to tendons, joints or bones (for example, users with osteoporosis, muscle shortening) you can adjust the motor power according to your needs after switching on the MOTOMed gracile12.

Always start your training with passive motion (legs or arms are moved by the motor) to warm-up. If you are able to train actively, train your first sessions at low resistance. Avoid overexertion – it is recommended to rather cycle in low gears for longer times and more frequently.

If the following conditions apply, you must not use the MOTOMed gracile12 without first consulting your doctor and therapist: rupture of the crucial ligament, arthrosis of knee and hip, lately replaced hip and knee joint, stiff knee joint, advanced stage of osteoporosis, extreme deformity of limbs, extreme muscle shortening, pressure sores, risk of hip or shoulder dislocation, acute thrombosis.

Training is not recommended if there is the risk of skin abrasions, pressure marks or other injuries due to the health situation, position of feet or the adjustment of the leg guides with calf shells. You can train however, if you take the right safety measures (insert buffer material, etc.). Special *elastic calf shell pads* are available as accessory (*item no. 521K*) and *Velcro padding* (*item no. 546*) are available as accessory. You must consult a doctor and therapist, or assume the responsibility if you train on your own and have open wounds or are at risk to get pressure sores (e.g. due to sensitive skin or tissue) particularly those body parts touching the therapy trainer (e.g. legs). The manufacturer does not assume liability for injuries caused by neglecting these instructions.

Under the influence of alcohol, medicine or drugs, the health risks of using the MOTOMed gracile12 can be increased. Such usage is advised against.

Please ensure that the MOTOMed gracile12 is placed on an even, non-slip surface for best possible stability (if possible place it against a wall).

Place the MOTOMed gracile12 so that it cannot tilt or fall over and cause injuries to somebody. Don't put weight on only one side of the MOTOMed gracile12. The mains cable must not be laid under the device.

If tilting backwards or rolling away of the wheelchair due to spasms or active training cannot be ruled out, the use of a *wheelchair stabilizer* (*item no. 8*) will be required.

see page 68

see page 69 If tilting backwards or sliding of the chair cannot be ruled out, the use of a *chair fixation with stabilizer (item no. 511)* will be required.

The MOTOmed gracile12 might slip on smooth floors (tiles, laminate, parquet floors etc.). Therefore, *anti-slip caps (item no. 591)* for the small front leg of the device are available.

Please make sure that the rubber feet of the MOTOmed gracile12 do not leave imprints or spots on delicate floor coverings such as carpet or PVC. As accessory to put under the MOTOmed gracile12, the *anti-slip mat (item no. 589)* is available.

Please make sure that you apply the brakes of your wheelchair before starting your training with the MOTOmed gracile12. If you are training seated in a power wheelchair it has to be switched off and its brakes must be applied as well.

Only put your feet into the foot shells while seated or lying down. Never step in while standing upright. Do not put more than 25 kg/ 55 lb (at 7 cm/2.8 inches pedal radius) of weight onto either pedal.

see page 16 During training with an arm/upper body trainer or with strong loads affecting the MOTOmed, please ensure that the front support is pulled out for stability (however make sure to leave at least 10 cm/4 inches in the tube) to avoid the MOTOmed gracile12 tipping over towards the user. While training the arms, the legs have to be removed from  
see page 24 the foot shells. During height adjustment of the arm trainer you must not touch the embedded part of the supporting module.

see page 56 Before starting your training, make sure that the screw knob fixing of the supporting module of the handlebar or arm/upper body trainer is tightened and that your legs or arms are secured properly. Ensure that 10 cm/4 inches of the handlebar or arm/upper body trainer remain inserted in the supporting module. The height adjustment of the leg guides need to remain inserted 3 cm/1.2 inches.

see page 64 Before starting leg training, the arm/upper body trainer has to be swivelled back so that you can hold tight to the handlebar.

If you have any doubts regarding the proper power connection of the MOTOmed gracile12 or any other question, please get in contact with our customer service team.  
see page 81

Training and insertion/removal of legs or arms should never be done without supervision of a qualified person if it cannot be made sure that the user understands the functions and purpose of the MOTOmed gracile12 and that he is able to switch off the device through the operating panel during the training (particularly during the arm/upper body training with forearm shells). In general, supervision during the training is recommended.

Ensure before every training session that the screws of all adjustable parts of the device (arm/upper body trainer, front leg, handlebar...) are tightened and intact. In case they get loose during the operation you have to stop the training immediately and fix the screws.

Suitable clothing must always be worn. Wide trousers, long towels and scarves that could get caught or tangled in the pedal crank must not be worn. Shoes with shoe laces must not be worn, either.

If experiencing any pain, nausea, circulatory weakness, the training should be stopped right away and your doctor should be consulted. The manufacturer and its distributors do not assume responsibility for improper or over intensive use by the user.

While the pedals/foot shells are turning, neither the user nor any other person should make any mechanical alterations to the MOTOmed gracile12 (pedal radius, height adjustment of handlebars or arm/upper body trainer etc.). Never try to grab hold of any moving parts!




The MOTOmed gracile12 must not be moved while legs or arms are inserted or secured to the device.

Please train only after you have switched on the MOTOmed gracile12!

Children should never use the MOTOmed gracile12 without supervision.

If the red "start/stop" button fails to stop the MOTOmed gracile12, immediately adjust the speed to 0 rpm and end your training right away. You can train again as soon as the malfunction is eliminated.

see page 91  
Being an electronic medical device the MOTOmed gracile12 has to comply with special safety standards in regard of electromagnetic compatibility. During installation and operation the EMC information has to be followed.

see page 83  
  
Before you plug the MOTOmed gracile12 into a mains socket please check that the voltage of the device stated on the marking corresponds with the voltage of the power supply. The MOTOmed gracile12 is earthed by the ground wire in the mains cable. In order to avoid electric shock, please make sure that the electrical system in your house and the wall socket you connect the MOTOmed gracile12 to is also properly earthed. The MOTOmed gracile12 must only be used if the power cable is free from grazes, bruises, porous points, kinks or buckles – wires should never be exposed. Before using the MOTOmed gracile12 each time check that there is no damage to the power cable and that the power cable cannot interfere with the mechanical operation of the device. Further place the mains cable during training in a way that no mechanical damage can occur. Make also sure that nobody will trip over the mains cable. Only use fuses which match the specifications indicated for the MOTOmed gracile12.

Multiple sockets or extension cords that you may use with the MOTOmed have to comply with the standards for medical equipment.

In order to avoid fire hazard or electrical shock the MOTOMed gracile12 must never be operated if the casing has been removed. In the same way the MOTOMed gracile12 must never be operated in any wet or damp environments. The MOTOMed gracile12 must never be opened by any unqualified person and metal objects must never be inserted.



Portable or mobile communication devices, like mobile phones or amateur radio stations, can influence the functioning of the MOTOMed gracile12. Such devices carry the symbol illustrated on the left side and can thus be recognized.

see page 73

If the motor is on overload, please follow the instructions "overheating". When cycling actively in small gears, the function "ServoCycling" can be recognized easily. This means that through the support of the motor the speed of the MOTOMed gracile12 can be significantly increased by applying only little muscle strength. Thus, the effect of the muscle force applied is enforced by the motor. One-sided training, either with only one leg/arm or with big differences in weight of the limbs should be done only under supervision of a person in charge and only in a high gear. In case of an amputated leg a *counter weight (item no. 535)* is required.

The MOTOMed gracile12 is suitable only for therapeutic use. The values displayed are not suitable for diagnostic purposes.

In order to avoid overheating of the casing you must not expose the MOTOMed gracile12 to long-term direct solar radiation. Further you must not block actively against the passive motion as this could damage the motor and the electronics.

The MOTOMed gracile12 must not come into contact with water or steam. If an object or liquid gets into the MOTOMed gracile12 you have to have it checked by qualified personnel before you can continue to use it.

Keep animals away from the MOTOmed gracile12.

Don't leave the packaging material lying around. Plastic foils/bags, Styrofoam parts etc. can be hazardous toys for children.

Security related controls according of the medicine product operator regulation (Medical Devices Act) have to be carried out at least every second year. The latest version of the regulation has to be followed.

In the event that you pass this MOTOmed gracile12 on to another person, please enclose also this instruction manual.

Repairs may be carried out ONLY by or under direction and supervision of individuals (qualified personnel) whose qualified training, knowledge and experience enable them to evaluate the repair and to recognize the potential effects and hazards that might result out of the repair.

see page 81

Only original parts can be attached or exchanged. Always make sure to keep oil away from the drive mechanism.  
Follow the norm DIN VDE 0751.

The MOTOmed gracile12 must only be opened by qualified personnell.  
Beforehand the device must always be unplugged from the mains socket.



- 94 **Manufacturer's declaration – electromagnetic emissions**
- 95 **Manufacturer's declaration – electromagnetic immunity**
- 97 **Recommended separation distances**

The manufacturer states that the mains cable of the MOTOMed gracile12 complies with the requirements of the EN 60601-1-2:2001. If the original mains cable coming with the MOTOMed gracile12 is not taken into use, the electromagnetic emission of the MOTOMed gracile12 may increase and the immunity may decrease.

## Manufacturer's declaration – electromagnetic emissions


The MOTOMed gracile12 is supposed to be operated in the electromagnetic environment described below. The customer or user of the MOTOMed gracile12 has to guarantee the use in the appropriate environment.

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The MOTOMed gracile12 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The MOTOMed gracile12 is made for the use in facilities and homes which are connected to the public mains supply which also supplies individual homes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	complied	

## Manufacturer's declaration – electromagnetic immunity

The MOTomed gracile12 is to be operated in the electromagnetic environment described below. The customer or user of the MOTomed gracile12 has to guarantee the use in the appropriate environment.

Immunity test	IEC 60601 – test level	Electromagnetic environment – guidance
Electrostatic discharges (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for entry and exit lines	Mains power quality should be that of a typical commercial and/or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial and/or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5 % $U_T$ (> 95 % dip in $U_i$ ) for 1/2 cycle  40 % $U_T$ (60 % dip in $U_i$ ) for 5 cycles  70 % $U_T$ (30 % dip in $U_i$ ) for 25 cycles  < 5 % $U_T$ (> 95 % dip in $U_i$ ) for 5 s	Mains power quality should be that of a typical commercial and/or hospital environment. If the user of the MOTomed gracile12 requires continued operation during power mains interruptions, it is recommended to power it from an uninterruptible power supply like a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	The magnetic fields at the supply frequency should be of typical business or hospital values.
Remark: $U_T$ is the mains common-mode voltage prior to the application of the test level.		

Immunity test	IEC 60601 – test level	Compliance level	Electromagnetic environment – guidance
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 V<sub>eff</sub> 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.5 GHz</p>	<p>3 V<sub>eff</sub> 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.5 GHz</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the MOTOMed gracile12 including cables, than the recommended separation distance calculated from the equation appropriate for the frequency of the transmitter:</p> <p><b>Recommended separation distance:</b></p> $d = 3,5/3 \sqrt{P} = 1,17 \sqrt{P}$ $d = 3,5/10 \sqrt{P} = 0,35 \sqrt{P}$ <p>for 80 MHz to 800 MHz</p> $d = 7/10 \sqrt{P} = 0,35 \sqrt{P}$ <p>for 800 MHz to 2,5 GHz</p> <p><i>P</i> is the maximum output power rating of the transmitter in watts (W) according to the specifications of the manufacturer and <i>d</i> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol: </p>
<p>Note 1: At 80 MHz and 800 MHz the higher frequency range applies.</p>			
<p>Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.</p>			
<p>a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the MOTOMed gracile12 is used exceeds the applicable RF compliance level above, the MOTOMed gracile12 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the MOTOMed gracile12.</p>			
<p>b Over the frequency range 150 KHz to 80 MHz field strengths need to be less than [V<sub>i</sub>] V/m.</p>			



## Recommended separation distances between portable and mobile RF communications equipment and the MOTOMed gracile12.

The MOTOMed gracile12 is supposed to be operated in an electromagnetic environment where the RF interference is controlled. The customer or user of the MOTOMed gracile12 can help avoid electromagnetic interference by keeping the separation distances between portable and mobile RF communications equipment (transmitters) and the MOTOMed gracile12 – which depends on the performance of the communication device as described below.

Rated maximum output power of transmitter <i>W</i>	Separation distance in relation to the frequency of transmitter in meter		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2,5 GHz
	$d = 1,17\sqrt{P}$	$d = 0,35\sqrt{P}$	$d = 0,7\sqrt{P}$
0,01	0,12	0,04	0,07
0,1	0,37	0,11	0,22
1	1,17	0,35	0,70
10	3,70	1,11	2,21
100	11,70	3,50	7,00
For transmitters rated at a maximum output power not listed above, the separation distance <i>d</i> in meters (m) can be estimated using the equation in the corresponding column, where <i>P</i> is the maximum output power rating of the transmitter in watts (W) according to the specifications of the manufacturer.			
Note 1: At 80 MHz and 800 MHz the higher frequency range applies.			
Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			



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GB 713.6/W14b (entspricht dt. Version „c“) 11.09 binSt

Technical modifications for the purpose of technical improvement are subject to change without notice. Reprint, even in parts, only by approval of the RECK Company.



# Instruction Manual

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## MOTOmed gracile12



QUALITY  
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We are authorized



**RECK** MOTOmed®  
Movement Therapy Devices

Reck-Technik GmbH & Co. KG  
Reckstr. 1-5, 88422 Betzenweiler, GERMANY  
phone +49 7374 18-85  
fax +49 7374 18-480  
info@motomed.com, www.motomed.com

“Made in Germany”