

# BALANCE TRAINER

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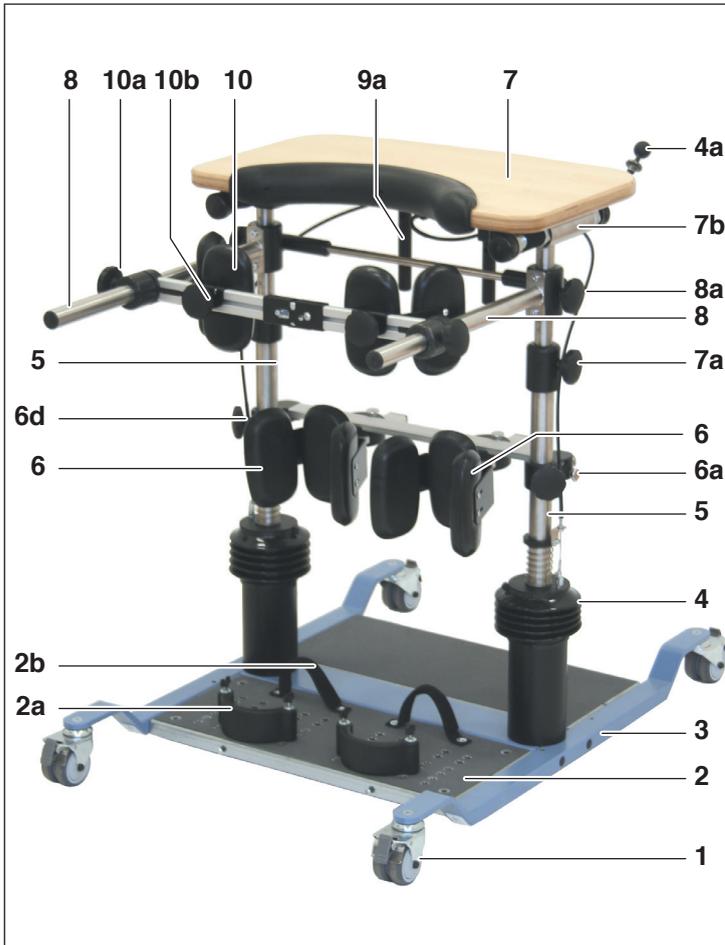
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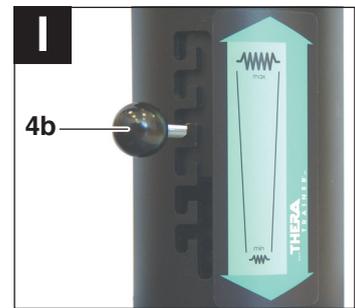
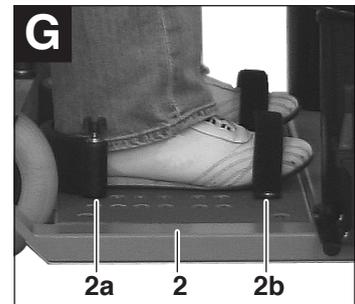
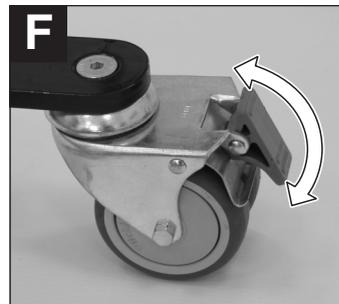
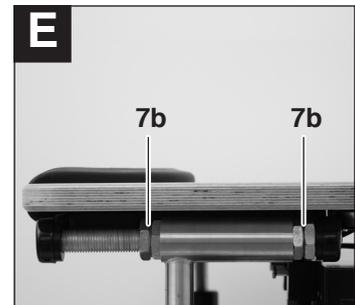
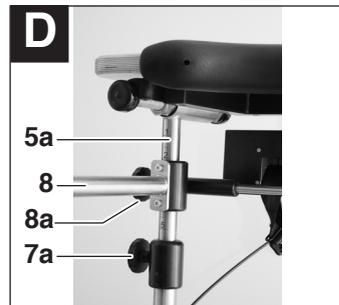
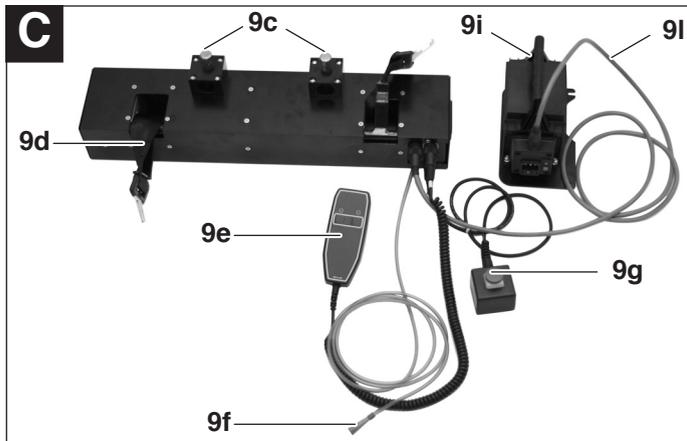
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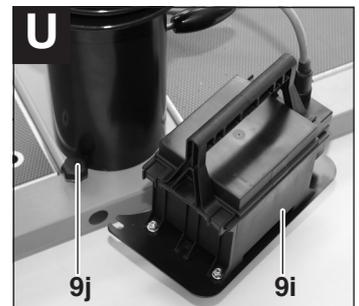
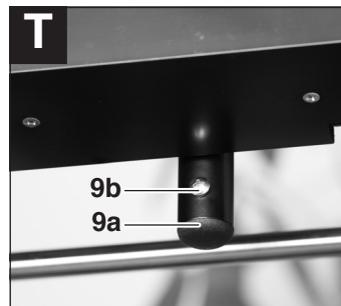
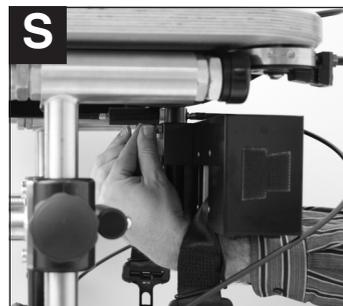
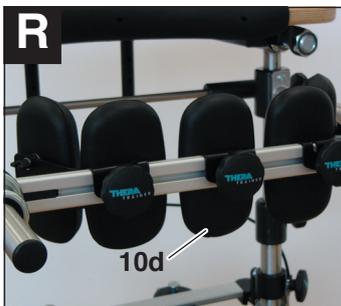
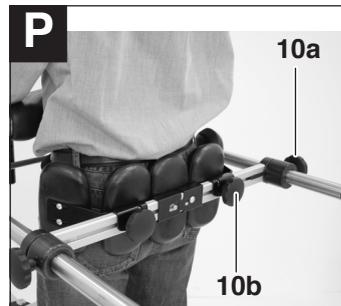
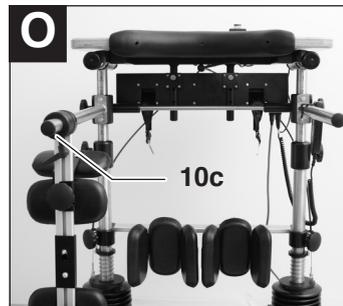
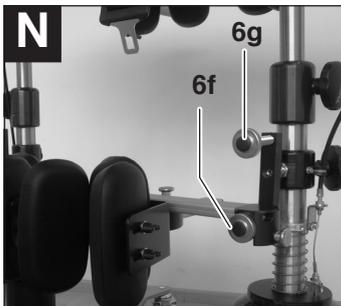
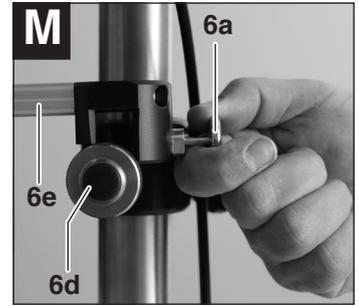
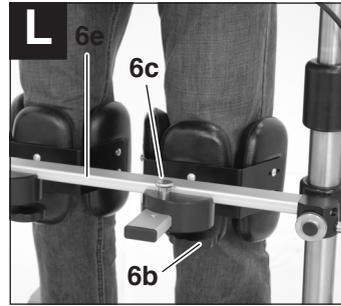
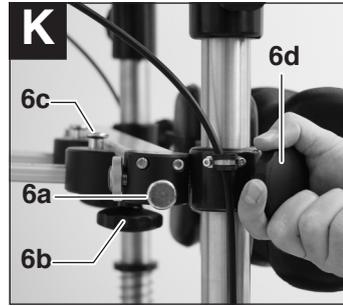
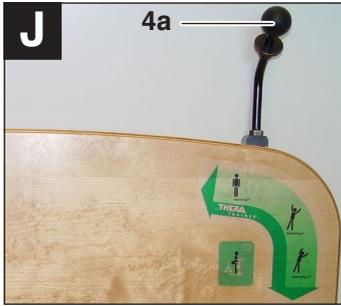
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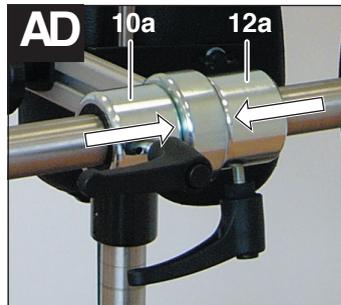
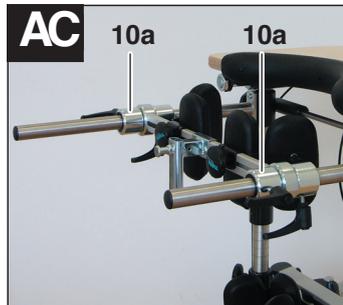
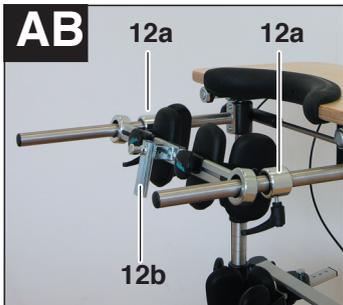
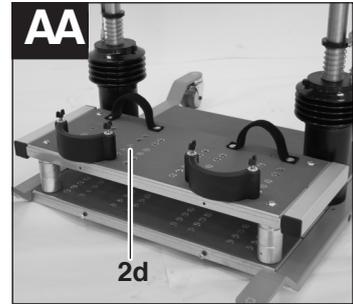
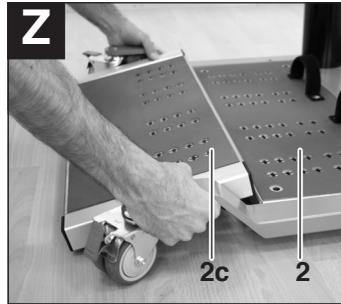
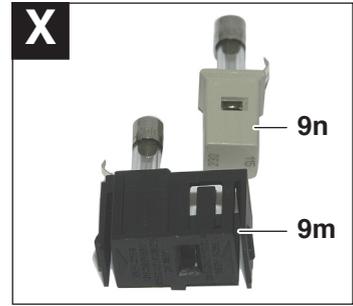
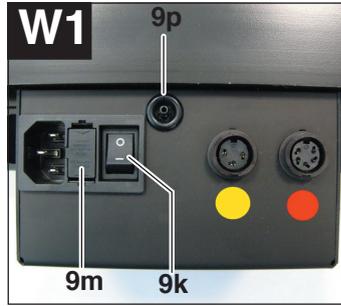
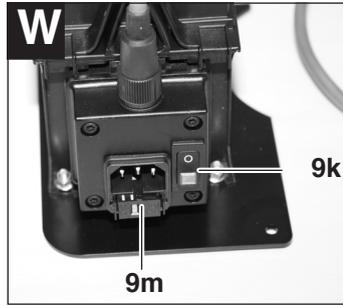
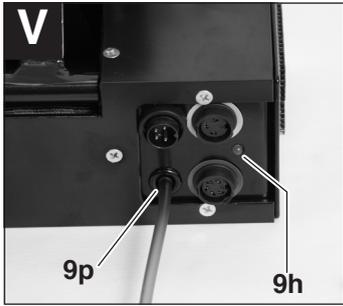


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## Product versions

The BALANCE-Trainer is available in two sizes:

- BALANCE-Trainer, art. nr. 07001-001 , recommended for persons with a height of between 150 and 200 cm.
- BALANCE-Trainer, art. nr. 07017-002 BALANCE-Trainer, recommended for persons with a height of between 120 and 160 cm.

The basic version of the BALANCE-Trainer is used by people who are capable of standing up on their own and only require a little help to remain in a standing position. A standard support strap stabilises the hips. Foot-straps and heel cups provide additional stability.

## Options

The following options are obtainable:

- Electric belt system
- Hip supports
- Centre pad for hip support
- Knee supports
- Upper body supports
- Patient support belt with seat
- Patient support belt with seat and legs
- Footplate extension
- Footplate enhancement
- Balance-soft training software

## Intended use

The BALANCE-Trainer is suitable for use in the home, in care institutions, hospitals and medical practices. It is intended to improve the mobility of persons suffering impaired mobility as a result of accidents, surgical operations or general conditions affecting the mobility of the support and locomotor systems.

It is not possible to give specific details of the use of the BALANCE-Trainer for the various possible medical conditions or to provide specific exercise programmes. The possible settings depend on the patient's individual condition, capacity for exertion after undergoing an operation, age, build and general physical constitution.

The BALANCE-Trainer is a therapeutic exerciser and not a medical instrument for diagnostic purposes.



The BALANCE-Trainer may not be modified without the manufacturer's permission.

## Indications

The BALANCE-Trainer is suitable for all users with balance and co-ordination difficulties when standing and walking, for instance as a result of a stroke, multiple sclerosis, Parkinson's disease, diseases of the muscles, paraplegia or geriatric conditions.

For patients with hereditary or acquired impairment or loss of the ability to stand unaided, the BALANCE-Trainer provides the ability to maintain an upright (or nearly upright) standing position.

The BALANCE-Trainer enables patients to stand up safely from a wheelchair with or without assistance from another person, depending on the user's condition, and to subsequently perform combined standing and balancing exercises. The patient is held in the standing position by foot, knee and hip supports (depending on the optional equipment purchased).

## Contra-indications

The BALANCE-Trainer must not be used for:

- patients with severe muscle contractions or patients with exposed compression injuries in the ventral area of the knees.
- patients who have been bed-ridden for a long period and whose circulation system must only be gradually stimulated
- patients whose lower limbs have a limited capacity to support their body weight.

**Trainer components and controls**

- 1 Castors **F**
- 2 Footplate
  - 2a Heel cups **G, H**
  - 2b Foot-strap (Velcro strap) **G**
  - 2c Footplate extension **Z**
  - 2d enhancement footplate **A**
- 3 Base frame
- 4 Balance joint and arrester
  - 4a Lever for balance function **J**
  - 4b Counterbalancing force adjuster **I**
- 5 Vertical supports
  - 5a Height adjustment scale **D**
- 6 Knee supports **K, L, M**
  - 6a Snap-lock pins for knee supports
  - 6b Spread adjuster
  - 6c Snap-lock pins for horizontal adjustment (knee bending/extension)
  - 6d Knee-support height adjuster
  - 6e Knee-support crossbar
  - 6f Bottom mounting point for knee supports (BALANCE-Trainer, special size)
  - 6g Upper mounting point for knee supports (option for BALANCE-Trainer, special size)
- 7 Exerciser table
  - 7a Height adjuster for exerciser table **D**
  - 7b Horizontal adjuster for exerciser table **E**
- 8 Handrail
  - 8a Height adjuster for handrail **D**
- 9 Belt system (art. nr. 07005-000) **A, C**
  - 9a Mounting point for belt system **T**
  - 9b Belt system securing screw **T**
  - 9c Snap-lock pins for fixing belt system **C**
  - 9d Belt **C**
  - 9e Remote control handset **C**
  - 9f Tube for oral control **C**
  - 9g Emergency stop button **C**
  - 9h Standby indicator **V**
  - 9i Transformer **C**
  - 9j Transformer fixing **U**
  - 9k Power switch **W**
  - 9l Transformer/belt system connecting lead **C**
  - 9m Fuse holder **X**
  - 9n Voltage selector insert (115/230 V) **X**
  - 9p Connection socket for oral control **V**
- 9 Belt system (art. nr. 07033-000, 07034-000, 07035-000) **C1**
  - 9c Snap-lock pins for fixing belt system **C1**
  - 9d Belt **C1**
  - 9e Remote control handset **C1**
  - 9f Tube for oral control **C1**
- 9g Emergency stop button **C1**
- 9h Standby indicator **C1**
- 9k Power switch **W1**
- 9m Fuse holder **W1**
- 9o Power lead **C1**
- 9p Connection socket for oral control **W1**
- 10 Hip support **P**
  - 10a Hip-support adjuster
  - 10b Hip-support sideways adjuster
  - 10c Securing screw for hip-support adjuster **O**
  - 10d Centre pad **R**
- 11 Patient support belt **Y, Y**
  - 11a Belt buckle
  - 11b Waist belt
- 12 Upper body support **B, AB, AC, AD**
  - 12a Adjuster sleeves
  - 12b Fixture
  - 12c Head rest
  - 12d Back pad
  - 12e Lateral supports
  - 12f Chest strap

## Safety

- Before using the trainer for the first time, have your dealer or doctor/therapist show you how to use it.
- Always place the BALANCE-Trainer on a level and non-slip surface so as to ensure maximum stability.
- The basic version of the BALANCE-Trainer is not suitable for performing ball games. For such purposes you require the chassis side extensions (optional feature). Sudden sideways rocking movements could cause the BALANCE-Trainer to tip over.
- Only use the BALANCE-Trainer at a safe distance from walls or other objects so as to prevent the possibility of impact.
- The BALANCE-Trainer must never be used without the belt system.
- Always check that **all four** wheels are locked before every exercise session.
- The balance function must be disabled before the patient “gets into” the trainer BALANCE-Trainer (see page 35).
- All users who can not stand safely on their own must use the knee and hip supports.
- Only use the BALANCE-Trainer under supervision by a **trained** assistant.
- If you suffer symptoms of illness during or after exercising, consult a doctor immediately.
- The electric belt system (optional feature) of the BALANCE-Trainer must only be operated with the correct power supply voltage. Connect the transformer (art. nr. 07005-000) or the belt system (art. nr. 07033-000, 07034-000, 07035-000) only to a properly earthed power socket.
- Do not use the electric belt system if you suffer from severe spasms. Check first with your therapist.
- The electric belt system is not designed for continuous use (a maximum of 10 lifting operations under load within a period of 5 minutes is permitted, after which it should be allowed to cool for 10 minutes).
- Only the fuses listed in the technical specifications may be used for the electric belt system. When fuses with too high ratings are used, malfunctions can - in the worst case - cause the exerciser to ignite.
- On trainers with electric belt system **A/C/C1** check that the belt **11** is correctly positioned before the patient stands up.
- The belt buckle tongue must snap into the belt buckle with an audible click.
- The emergency stop button **9g** must always be within reach of the user or assistant.
- During operation, the power switch **9k** must always be able to be reached.
- Route all electrical leads so that they do not obstruct the movement of the user and can not cause the user to stumble. Never use the trainer if any of the leads are damaged.
- To prevent electric shock, the electric belt system (optional feature) must not be used in wet, damp or very hot environments.
- Check the height of the knee supports before standing up. The knee cap must be roughly in the middle of the support pad when standing.
- Check that the knee supports are securely fixed every time they are adjusted (all knobs and snap-lock pins).
- Always set both sides of the table to the same height (scale) and tighten the knobs firmly.
- When standing up out of the wheelchair, always use the knee supports and put the wheelchair brakes on.
- Always place the wheelchair behind the patient so that the patient can sit down again safely if there are problems standing up.
- Set the counterbalancing force to the same level on both sides and start with a high level when first using the trainer.
- When exercising with the BALANCE-Trainer, make sure that your posture is physiologically correct. Ask for advice from your therapist.
- When the user is balancing for the first time, the assistant should always stand behind.
- Consult your doctor/therapist about how long your exercising sessions should last.
- Have your exercising position checked by a doctor/therapist.

- Check that the foot straps (Velcro straps) are securely fastened.
- Check that the heel cups are securely fixed.
- While the user is standing in the BALANCE-Trainer, the horizontal and vertical position of the knee supports must not be altered.
- Always screw the raised footplate firmly to the base plate.
- Never leave the BALANCE-Trainer unattended when there are children present.
- Repairs may only be carried out by trained specialist dealers.
- In the event of trainer damage/faults, stop exercising immediately, unplug the main plug for the electric belt system (optional feature) if fitted and notify your service technician.
- Have the BALANCE-Trainer checked every two years by a trained technician.
- Do not use fluids that contain solvents to clean the trainer.
- To prevent infection, disinfect the BALANCE-Trainer before every exercise session.
- When using the electric belt system with transformer (art. nr. 07005-000), fold the transformer away during transport. It should not protrude sideways beyond the base plate.
- The trainer must not be used to move people around.
- Do not smoke when using the BALANCE-Trainer.  
The BALANCE-Trainer can be damaged by smoking implements.
- When adjusting the handrails, make sure that your fingers are not between the sliding sleeves. Your fingers could become trapped.

## Symbols used

The symbols used in this instruction manual and, if applicable, on the trainer are intended to draw your attention to possible dangers when using the trainer.

You should make sure you understand the meaning of the symbols/signs so that you can act accordingly and thereby use the trainer more effectively and safely.

 **Manufacturer's tip**

 **Non-ionizing radiation**

 **Manufacturer**

 **Date of manufacture**

 **This product complies with European Directive 93/42 EEC for medical products**

**SN** **Serial number**

 **Follow the directions in the instruction manual!**

 **Type B application product**

 **Observe accompanying documentation**

 **Return electric belt system and BALANCE-soft sensor to the manufacturer for disposal**

 **Maximum patient weight**

 **All-insulated, protection class II**



maximum

**Counterbalancing force adjustment scale for Balance function**

minimum



**Balance function**

0° = disabled

6° = enabled with limited range of movement

12° = enabled with full range of movement



for all persons who can not stand safely unaided: fit **hip support** (optional feature) before enabling balance function.

A belt system is nevertheless imperative.

## Exercise therapy notes

### General observations

The object of therapy depends on the medical condition of the patient and may be aimed at maintaining mobility (preventative therapy) or at rehabilitation after an operation or injury, i.e. at regaining mobility and strength.

We recommend that the BALANCE-Trainer is used as part of a planned exercise programme prescribed by a doctor or therapist. Begin exercise sessions slowly and then increase the level of intensity gradually according to the user's physical capabilities, being particularly careful to avoid over-exertion.

### Uses

The BALANCE-Trainer is specifically recommended in the case of:

- Walking and mobility problems
- Multiple sclerosis
- Parkinson's disease
- Paraplegia
- Tetraplegia (only in conjunction with the upper body support [optional feature])
- Stroke, hemiplegia
- Muscle diseases
- Perception problems

The BALANCE-Trainer can be used for standing and balance training exercises:

- Standing exercises: the BALANCE-Trainer is rigid so as to provide the greatest possible support and stability for the user in a standing position.
- Balance training exercises: the exerciser table can be tilted against an adjustable counterbalancing force so that the user can balance his/her body weight with his/her feet.

The patient approaches the BALANCE-Trainer and gets into it as appropriate to his/her physical condition. Users in wheelchairs move right up to BALANCE-Trainer and lift themselves into a standing position, with the aid of the electric belt system if required. The help of an assistant may also be required.

The trainer should have been set up as appropriate to the user's condition, ready for standing and balance training to begin.

### Correct posture

Always pay careful attention to ensuring that when exercising with the BALANCE-Trainer, the user's posture is in keeping with to the purpose of the therapy.

Adjust the height of the exerciser table **7** so that the waist pad is above the top of the pelvis.

### Exercise programme planning

The frequency and duration of exercise sessions (standing or balancing training exercises) should normally be individually planned and prescribed by a doctor or therapist. The success of the therapy is heavily dependent on the regularity of the exercising sessions.

Start with short exercising sessions so as to gradually accustom the user's circulation system to the increased level of exertion. The length of the exercising sessions can then be gradually increased in small steps, always taking care not to exceed the individual physical capabilities of the patient.

If training is resumed after an extended period of inactivity, it may be necessary to start with shorter sessions again.

## Transporting and setting up

### Using for the first time

Remove the BALANCE-Trainer from the packaging and check for any signs of damage that may have occurred in transport.

If you find any damage, contact your supplier immediately.

If your BALANCE-Trainer has the electric belt option, check that the power supply voltage setting matches the voltage of your main electricity supply **W**.

### Upgrading with the electric belt system **C** (optional feature)

The electric belt system consists of the following components:

- Motor unit with belt reels **9**
- Transformer and power lead **9i** (only art. nr. 07005-000) or
- Power lead **9o** (only art. nr. 07033-000, 07034-000, 07035-000)
- Remote control handset and connecting lead **9e**
- Oral control tube **9f**
- Emergency stop button and connecting lead **9g**
- Connecting lead from transformer to motor **9l**.



**Caution! Never change the belt system when there is a person in the BALANCE-Trainer.**

Upgrading the BALANCE-Trainer at a later date with the electric belt system is a straightforward operation due to the product's modular design.

- Remove the two cross-headed screws **9b** at the lower ends of the mounting tubes **9a** **T**.
- Place yourself in front of the BALANCE-Trainer so that you can place the relevant belt system ready for fitting/removal on your forearms and slide it onto the mounting tubes **S**.
- Pull out the snap-lock pins **9c** and remove the existing belt system.
- Slide the electric belt system **9** with the snap-lock pins **9c** pulled out onto the mounting tubes **9a** and allow the two snap-lock pins to snap into position.
- Secure the belt system with the two cross-headed screws **9b** at the lower ends of the mounting tubes **9a** **T**.

### Making the electrical connections

All plugs and sockets are mechanically keyed so as to prevent incorrect connection. Matching plugs and sockets are also colour coded for identification.

1. Remote control handset (yellow)
  - Plug the connector for the remote control handset **9e** into the matching socket on the motor unit **9**.

2. Oral control (black)

- Fit the oral control tube **9f** onto the nipple on the motor unit **9**.

3. Emergency stop button (red)

- Using the Velcro strips supplied, attach the emergency stop button **9g** in a position where it can be reached by the patient at any time (e.g. on the top of the table).



The emergency stop button **9g** must always be within reach of the patient.

- Plug the connector for the emergency stop button **9g** into the matching socket on the motor unit **9**.

4. Transformer (black)  
(only art. nr. 07005-000)

- Check that the voltage setting (230V or 115V) on the transformer **9i** is correct **W**. The voltage setting should be visible in the window on the front of the fuse holder **9m** (see also page 37, "Selecting the power supply voltage").
- Connect the transformer **9i** to the socket on the motor unit **9** using the red lead **9l**.
- Connect the transformer **9i** to an earthed main power socket using the main power lead.

5. Power lead (black) (only art. nr. 07033-000, 07034-000, 07035-000)
- Check if the correct voltage (230 V or 115 V) is set at the power supply **W**. The given power supply voltage must be readable in the opening at the front of the fuse holder **9m** (see also page 37, “Selecting the power supply voltage”).
  - Connect the belt system with the power lead to an earthed power socket.

### Using Electric belt system

-  Make sure that the red emergency stop button **9g** is not pressed.

The transformer (art. nr. 07005-000) / the electric belt system (art. nr. 07033-000, 07034-000, 07035-000) is equipped with a power switch **9k**.

- When the transformer is switched on, the On/Off button **9k** lights up (only art. nr. 07005-000).
- The green LED **9h** on the electric belt system lights up when the power is connected **V/C1**.

The electric belt system is operated by pressing the appropriate button on the remote control handset **9e** or sucking/blowing on the oral control tube **9f**.

For operation with the oral control, the tube must be disinfected regularly.

-  Disinfect the tube for the oral control **9f** by immersing it into a suitable disinfection agent for instruments. After disinfecting the tube 30 times (max.), it should be renewed.

Testing the emergency stop function:

- Start the belt system using the remote control handset **9e** or the oral control tube **9f**.
- Press the emergency stop button **9g**. The motor should stop.
- To cancel the emergency stop function, reset the emergency stop button by pulling out the red button.

The electric belt system is then ready for use.

### Switching off the electric belt system safely

To safely end the operation of the electric belt system, the power switch **9k** must be switched off.



Make sure that the power switch can always be easily reached during operation.

### Moving **F**

The BALANCE-Trainer is fitted as standard with lockable castors **1**.

When moving the BALANCE-Trainer, the balance function must be disabled (lever **4a** in position “0°”).

Make sure that the castors **1** are securely locked again after the trainer has been moved.

### Folding away the transformer (art. nr. 07005-000) **U**

While the BALANCE-Trainer is being used with the electric belt system, the transformer is mounted on the side of the base frame. To facilitate moving the trainer, especially through doorways, the transformer can be folded forwards as follows:

- Loosen rear fixing screw **9j** (approx. 2 turns).
- Fold transformer **9i** forwards.
- Before using again, fold transformer back again and secure with the fixing screw **9j**.

## Operation



The BALANCE-Trainer may only be used on firm and level surface with the castors locked.

### Adjusting the Exerciser table

#### Height of exerciser table **D**

Adjustment of the exerciser table is aided by integral gas-filled dampers. We recommend that you set the exerciser table 7 so that the waist pad is just above the top of the user's pelvis.

 You can adjust the height of the exerciser table on one side first and then adjust the other side to the same height.

- Undo the adjuster knob **7a** on the vertical support.
- Move the exerciser table to the desired height and **securely tighten the adjuster knob 7a!**
- Adjust the height on the other vertical support to the same level. The height adjustment scales **5a** on the vertical supports make it easy to set the exerciser table level.

#### Horizontal adjustment of exerciser table **E**

Adjusting the horizontal position of the exerciser table allows different physical builds to be accommodated so that the patient's weight is always directly over the centre of the BALANCE-Trainer.

- Loosen the nuts **7b** (SW41) (spanner size 41 mm) on both sides.
- Align the exerciser table evenly on both sides.
- Re-tighten the nuts.

#### Adjusting the knee supports **K, L** (optional feature)

The knee supports **6** provide stable support when standing up, balancing and sitting down.



**The knee supports 6 must be attached to the BALANCE-Trainer:**  
– if the patient is incapable of standing for long periods without knee support and  
– for standing up/sitting down.

The knee supports **6** on the BALANCE-Trainer are adjustable in a number of different ways so that they can be precisely adjusted to the user's requirements.

The knee supports **6** should be adjusted so that the patient's knees are inside them.



All adjustments to the BALANCE-Trainer must be such that they are precisely suited to the individual user so as to exclude the possibility of overextending the joints or damaging muscles, tendons or ligaments.

#### Adjusting the height

- Undo the adjuster knob **6d** on the vertical support 5.
- Move the knee supports to the desired height **securely tighten the adjuster knob 6d!**
- Adjust the height on the other vertical support to the same level. The height adjustment scales **5a** on the vertical supports make it easy to set the knee supports level.

#### Horizontal adjustment Knee bending/extension of knee joints

Each knee support can be individually adjusted horizontally to achieve the desired degree of knee bend/extension for each knee.

- Pull out the snap-lock pin **6c** on the knee support.
- Move the knee support to the desired position and let go of the snap-lock pin. **The snap-lock pin must lock into position with an audible click.**



**Always make sure that the snap-lock pins on the knee supports are properly engaged. If the knee supports are not firmly locked in position, the user could fall out of the belt when standing up from the wheelchair.**

## Spread adjustment

- Undo the adjuster knob **6b** on the knee support.
- Move the knee support to the desired position and **securely tighten the adjuster knob 6b again!**

## Removing the knee supports individually

### **M**

For functional exercises that require only one leg/knee to be supported by a knee support, one knee support **6** can be removed. When doing so, it is imperative to ensure that the patient can still safely maintain a standing position.

Remove the knee support before the patient is standing in the BALANCE-Trainer.

- Pull out the snap-lock pin **6c** on the knee support and pull the knee support **6** out of the holder.



When refitting the knee support, make sure that the snap-lock pin locks into position with an audible click.

**If the knee supports are not firmly locked in position, the user could fall out of the belt when standing up from the wheelchair.**

## Completely removing the knee supports

### **M**

For functional exercises (e.g. sidestep exercises) with the assistance of a therapist, the crossbar **6e** together with the knee supports can be completely removed to allow the therapist unrestricted access to the legs. When doing so, it is imperative to ensure that the patient can still safely maintain a standing position.

- Pull out the snap-lock pins **6a** on both sides of the crossbar **6e** and lift the crossbar upwards to remove.



When refitting the knee supports make sure that the crossbar **6e** is fitted onto the pins on the vertical adjusters **6d from above**.

## Upper mounting point for knee supports

### **N** (Option for special-size BALANCE-Trainer)

For persons larger than 150 cm, the standard mounting position of the knee supports on the special-size BALANCE-Trainer may be too low. For this case, an alternative fixture can be provided for the knee supports. The fixture must be mounted by a trained technician.

- Pull out the snap-lock pins **6a** on both sides of the knee-support crossbar **6e** and remove the crossbar upward.
- Insert the knee support **on both sides** onto the upper mounting point **6g**.



When mounting the knee supports, pay attention that the crossbar **6e** is slid **from above** onto the bolts of the height adjuster **6g** and **6f**.

## Adjusting the handrails **D**

The height of the handrails **8** should be adjusted to suit the requirements of the user. They should always be high enough to be within easy reach of the patient while exercising.



When the height of the exerciser table is altered, the handrails are moved at the same time.

- Undo the adjuster knob **8a** on the vertical support.
- Move the handrail **8** to the desired height and **securely tighten the adjuster knob 8a!**
- Adjust the other handrail to the same height. The height adjustment scales **5a** on the vertical supports make it easy to adjust the handrails to the same height.

## Adjusting the hip support **P** (optional feature)

The hip support is used to provide lateral stability and support for the user when standing/balancing. It is normally attached to the handrails by an assistant.



**The balance function must not be enabled when the patient is not wearing the belt (held only by hip support). If the adjuster sleeves were to come undone, the patient could fall over.**

### Supporting the user with the hip support **O, P**

The hip support mounting rail is pre-fitted to the left handrail **8**. Both adjuster sleeves **10a** are also fitted on the left handrail. One of the adjuster sleeves is secured by a screw **10c**.

- Help the user into the exercising position.
- Slide the hip support mounting rail **10** onto the right handrail **8**.
- Remove the first adjuster sleeve **10a** from the left handrail **8** and slide it onto the right handrail. Slide the adjuster sleeve into the desired position and tighten the screw.
- Loosen the second adjuster sleeve **10a** on the left handrail and fix in the desired position.

### Removing/refitting hip support

- Remove securing screw **10c** using a cross-bladed screwdriver.
- Undo and remove both adjuster sleeves **10a**.
- Remove the hip support mounting rail **10**.

To refit:

- To the left hand rail, first fit the hip support mounting rail **10** the right way round and then one adjuster sleeve **10a**.
- Secure the adjuster sleeve with the securing screw **10c**.
- Fit the second adjuster sleeve **10a** to the left handrail as well.

### Additional centre pads for hip support **R**

As a preventive measure in case of decubitus danger, two additional pads **10d** (max.) can be mounted in the centre of the hip support **10**. This must be carried out by a trained technician.

### Adjusting the upper body support **B, AB, AC** (option)

The upper body support **12** allows for optimal fastening of users with an unstable upper body. It consists of a vertical hand rail, a back pad **12d**, two lateral supports **12e**, a head rest **12c** and a chest strap **12f**. All elements are adjustable.

 The chest strap **12f** can be adjusted to the chest circumference. For this purpose, seams have been provided approx. 10 cm apart from each other. If required, cut directly next to these seams in order to avoid fraying of the strap.

The upper body support is fastened to the hip support **10** by means of an adapter **12b**. The hip support is not part of the upper body support. Assembly must be carried out by a trained technician.

Two additional adjuster sleeves **12a** for the handrails are included in the delivery scope of the upper body support **12**. Both adjuster sleeves must be slid onto the handrails **first**, before the hip support. For this, remove the hip support (see Removing/refitting hip support).

### Supporting the user with the upper body support **B, AB, AC, AD**

Both adjuster sleeves of the upper body support **12a** are slid onto the handrails **8**. The hip support mounting rail is pre-fitted to the left handrail **8**. Both adjuster sleeves **10a** are also fitted on the left handrail. One of the adjuster sleeves is secured by a screw **10c**.

- Help the user into the exercising position.
- Slide the hip support mounting rail **10** onto the right handrail **8**.
- Remove the first adjuster sleeve **10a** from the left handrail **8** and slide it onto the right handrail. Slide the adjuster sleeve into the desired position and tighten the screw.
- Loosen the second adjuster sleeve **10a** on the left handrail and fix in the desired position.
- Fasten the hip support to each handrail without any clearance between the two adjuster sleeves **12a** and **10a**.
- Insert the upper body support **12** into the fixture **12b** and adjust according to the requirements of the user.



**The upper body support can only provide the user with the necessary stability when the hip support has been affixed clearance-free with the four adjuster sleeves **12a** and **10a** **AC**.**

## Adjusting the balance function counterbalancing force **I**

For balance training exercises, the counterbalancing force of the balancing joints **4** can be varied. Persons with a lack of pelvic stability should choose a high counterbalancing force setting (lever pushed up).

- Move the balance function selector lever **4a** to position “**0**”.
- Move the lever **4b** to the desired setting and make sure that it locks into position.



The counterbalancing force must always be set to the same level on both vertical supports.

## Enabling/disabling the balance function **J**

 For the first exercising session, it is advisable to have an assistant present who has been trained in the use of the BALANCE-Trainer.

- Pull up the release collar and move the selector lever **4a** to the desired position:
  - “**0**” (balance function disabled).
  - “**6**” (balance function enabled with limited range of movement),
  - “**12**” (balance function enabled with full range of movement),
- Let go of the release collar and allow the lever to lock into position.



To disable the balance function, the BALANCE-Trainer must be in the resting position (centre). If the pa-

tient is to be able to disable the balance function on his/her own, he/she must be sufficiently mobile to adopt an upright standing position unaided. If that is not certain, the availability of help from an assistant must be guaranteed.



**The balance function must be disabled when the user is standing up out of or sitting down to a wheelchair.**

## Standard belt system **Q**

If the BALANCE-Trainer is purchased without the electric belt system, it is always supplied with a standard belt system.

The standard belt system is used to provide support and stability for the user during standing and balance training exercises.

Once the user is in the exercising position in the BALANCE-Trainer, he/she is strapped in with the standard belt system.



**The balance function must not be enabled when the patient is not wearing the belt (held only by hip support).**

## Electric belt system **A, C** (optional feature)

The electric belt system **9** was developed for users who are not capable of lifting/lowering themselves safely into a standing/sitting position with the strength of their own arms but nevertheless have sufficient upper body mobility to be able to stand upright without assistance.

In such situations, the electric belt system “supports” a large part of the patient’s weight. The assistant controls the electric belt system and helps the user to stand up or sit down.

A thermostatic switch is integrated to protect the electric belt system against overload. In case of continuous up and down motion, it stops the operation of the electric belt system. The standby indicator **9h** changes to red. Afterwards, lowering is possible only one more time. Lifting/raising is not possible until after the system has cooled off (the standby indicator **9h** changes back to green).

### Before using the electric belt system for the first time

If the BALANCE-Trainer is fitted with an electric belt system, the emergency stop button **9g** must be placed on the BALANCE-Trainer table in a position accessible to the patient and/or assistant.

The emergency stop button is provided with Velcro pads for that purpose. Stick the Velcro strips supplied in a suitable position and attach the emergency stop button **9g**.

## Fitting the Patient support belt

### **Y, Y** (optional feature)

#### Patient belt bottom enlarged (optional feature)

The support belt is correctly fitted when the seat (bottom edge) is firmly between the wheelchair seat and the patient's behind, and the waist belt **11b** is fastened.

#### Patient belt trouser-shape (optional feature)

- Slide the seat (bottom edge) of the support belt between the wheelchair seat and the patient's behind and fasten the waist belt **11b**.
- Slide the leg straps under the patient's legs then over the top of the legs and fasten to the velcro strips on the top of the straps.

## Technical specifications

<b>BALANCE-Trainer</b>		
Length	118 cm (46")	118 cm (46")
Width	78 cm (31") with transformer folded away	
Exerciser table height	95 to 125 cm (37" to 49")	77 to 98 cm (30" to 39")
Weight	71.6 kg (158 lbs)	69.6 kg (153 lbs)
Suitable for persons of		
– height	150 to 200 cm (4'9" to 6'6")	120 to 160 cm (3'9" to 5'2")
– weight	to 140 kg (308 lbs)	to 70 kg (154 lbs)
Materials used	Aluminium, steel, polystyrene, polyurethane and others	
<b>Electric belt system</b>		
Power supply	115/230 V~, 50/60 Hz (art. nr. 07005-000) 100 V~, 50/60 Hz (art. nr. 07035-000) 115 V~, 50/60 Hz (art. nr. 07034-000) 230 V~, 50/60 Hz (art. nr. 07033-000)	
Power consumption	250 VA	
Fuse rating	2 × 2 A slow	
Safety rating	Class II	
Protection rating	Type B 	
Enclosure rating	I PXO	
Noise emission	Lpa ≤ 70 dB (A)	
Noise emission rating	to DIN 45635-19-01-KL2	
Ambient conditions for operation	10 °C to 35 °C (50 °F to 95 °F) 0 to 90 % Rh 970 to 1030 hPa	
Ambient conditions for transport/ storage	–30 °C to 65 °C (–22 °F to 149 °F) 0 to 90 % Rh 970 to 1030 hPa	

## Cleaning and care

If the **BALANCE-Trainer** is fitted with the electric belt system, make absolutely sure the main power plug is unplugged from the power outlet socket before cleaning the **BALANCE-Trainer**.

Use only soft, damp cloths for cleaning and disinfecting **BALANCE-Trainer**.

For disinfecting, methylated spirit or conventional, methanol-free, alcohol-based disinfectants can be used. Information on disinfectants can be found, for instance, in the list of disinfectants recognised and approved by the Robert-Koch-Institut.



The following substances must not be used:

- Trichloroethylene
- Acetone
- Butanone
- Benzene
- Methanol
- Nitro thinners
- 1-propanol
- 2-propanol

## Cleaning the **BALANCE-Trainer**



**Clean and disinfect only by wiping with damp (not wet) cloths. Do not use disinfectant spray.**

The trainer is maintenance free.

## Disinfection of the oral control tube

The oral control tube **9f** is suitable for multiple use when being inserted regularly into a suitable disinfection solution for instruments.

When the tube is used by several patients, it must first be disinfected before being used by the next patient.

When disinfecting, it must be ensured that the tube is filled completely with disinfection agent. After disinfecting the tube 30 times (max.) or in case of visible damage, it must be renewed.

## Changing the fuse **W**, **W1**

- Disconnect the main power lead.
- Open the fuse socket and pull out the fuse holder **9m**.
- Remove the blown fuse from the fuse holder **9m** and replace it with a new one of the same rating (see page 36, "Technical specifications").
- Refit the fuse holder **9m**.

## Selecting the power supply voltage (only art. nr. 07005-000)

### **W**, **X**

- Disconnect the main power lead.
- Open the fuse socket and pull out the fuse holder **9m**.
- Remove the grey voltage selector insert **9n** from the fuse holder **9m** and re-insert it into the fuse holder so that it is facing the correct way round for the required power sup-

ply voltage. The power supply voltage must be visible in the window on the front of the fuse holder **9m**.

- Refit the fuse holder **9m**.

## Guarantee terms

The Guarantee period guarantee period for the **BALANCE-Trainer** is 24 months from the date of delivery or the invoice date.

medica Medizintechnik GmbH undertakes within that period to replace defective components of the trainer free of charge or to repair the trainer free of charge at the factory or to have it repaired free of charge by a contracted repairer authorised by medica Medizintechnik GmbH.

The guarantee does not cover normal wear and tear.

The guarantee shall be void if the trainer is opened up, if it is fitted with third-party components or if repairs are carried out by persons not authorised by medica Medizintechnik GmbH. Damage arising from use of the trainer for any purpose other than that for which it is intended shall similarly void the guarantee.

## Repairs after the guarantee has elapsed

After the guarantee has elapsed, repairs (with exception of changing the fuses) may be carried out only after consultation with the manufacturer. If appropriate, the manufacturer can provide circuit diagrams, components, descriptions and other required information.

## Recycling

The BALANCE-Trainer is a high-quality and durable product with a long service life that is also environmentally safe and recyclable. The majority of its components can be disposed of

at a scrap metal recycling facility. The plastic components are made of polyurethane, ABS or polyethylene. The electrical and electronic components can be disposed of as electronic waste.

## Tips and hints for using the BALANCE-Trainer

Problem	Suggested solution	See also
The electric belt system won't work and the LED on the belt system is not on.	Is transformer switched on (is light switched on)? Check mains power lead. Check fuses.	Page 31
LED on belt system is on but belt system won't work	Has emergency stop button been pressed?	Page 31
Belt system runs unevenly.	Contact your service technician and have the trainer checked.	

## EC Declaration of Conformity

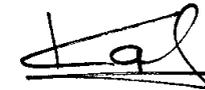
We,

medica Medizintechnik GmbH  
Blumenweg 8  
D-88454 Hochdorf

hereby declare that the product BALANCE-Trainer (Class 1 product to Annex VII) complies with the applicable requirements of the following Directives:

– Directive 93/42/EEC on medical products

Hochdorf, 2007/5/10



Peter Kopf  
Managing Director

## Notes on electromagnetic compatibility of belt system

### Electrical leads, lead lengths accessories

The belt system may only be operated with the original power cord.

### Warning note about siting

The apparatus or system may not be placed in the immediate proximity of or stacked together with other equipment. If operation in the immediate proximity of or stacked together with other equipment is absolutely unavoidable, the apparatus or system should be observed in order to make sure it is operating as intended in that location.

### Compliance levels

The apparatus complies with the interference immunity testing levels required by IEC 60601.

## Interference emission

Guidance and manufacturer's declaration on electromagnetic emissions		
The belt system is intended for operation in the electromagnetic environment specified below. The belt system owner or user should ensure that the apparatus is used in such an environment.		
Emission measurements	Compliance	Guidance on electromagnetic environment
High-frequency emissions as per CISPR 11	Group 1	The belt system only uses high-frequency energy for its internal functions. Therefore, its high-frequency emissions are very low and it is unlikely that adjacent electronic equipment will suffer interference.
High-frequency emissions as per CISPR 11	Class B	The belt system is intended for use in all types of facility including: - residential areas - facilities that are directly connected to a public power grid that also supplies residential buildings.
High-frequency oscillations as per IEC 61000-3-2	Class A	
Voltage fluctuations/flicker as per IEC 61000-3-3	complies	

## Interference immunity

<b>Guidance and manufacturer's declaration on electromagnetic interference immunity</b>			
The belt system is intended for operation in the electromagnetic environment specified below. The belt system owner or user should ensure that the apparatus is used in such an environment.			
<b>Interference immunity test</b>	<b>IEC 60601 testing level</b>	<b>Compliance level</b>	<b>Guidance on electromagnetic environment</b>
Electrostatic discharge (ESD) as per IEC 61000-4-2	± 6 kV contact discharge (indirect) ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	Floors should be wooden or concrete or surfaced with ceramic tiles. If the floor has a covering made of synthetic material, the relative humidity must be at least 30%.
Rapid transient electrical interference bursts as per IEC 61000-4-4	± 2 kV for power leads ± 1 kV for input and output leads	± 2 kV for power leads ± 1 kV for input and output leads	The quality of the power supply voltage should match that of a typical business or hospital environment.
Voltage surges to IEC 61000-4-5	± 1 kV out-of-phase voltage (symmetrical) ± 2 kV in-phase voltage (asymmetrical)	± 1 kV out-of-phase voltage (symmetrical) ± 2 kV in-phase voltage (asymmetrical)	The quality of the power supply voltage should match that of a typical business or hospital environment.
Voltage dips, temporary interruptions and fluctuations of the power supply voltage as per IEC 61000-4-11	< 5 % $U_T$ for 0.5 periods (> 95 % dip) 40 % $U_T$ for 5 periods (60 % dip) 70 % $U_T$ for 25 periods (30 % dip) < 5 % $U_T$ for 5 s (> 95 % dip)	< 5 % $U_T$ for 0.5 periods (> 95 % dip) 40 % $U_T$ for 5 periods (60 % dip) 70 % $U_T$ for 25 periods (30 % dip) < 5 % $U_T$ for 5 s (> 95 % dip)	The quality of the power supply voltage should match that of a typical business or hospital environment. If the belt system user requires continued functioning even during power supply interruptions we recommend that the belt system is supplied by an uninterruptible power supply or battery.
Magnetic field at power supply frequency (50/60 Hz) as per IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields at the power supply frequency should match the typical levels encountered in business and hospital environments.

NOTE:  $U_T$  is the main alternating voltage before application of the testing level.

**Guidance and manufacturer's declaration on electromagnetic interference immunity**

The belt system is intended for operation in the electromagnetic environment specified below. The belt system owner or user should ensure that the apparatus is used in such an environment.

Interference immunity test	IEC 60601 testing level	Compliance level	Guidance on electromagnetic environment
Conducted high-frequency interference as per IEC 61000-4-6	3 V <sub>eff</sub> 150 kHz to 80 MHz	3 V <sub>eff</sub>	<p>Portable and mobile radio equipment should not be used in closer proximity with the belt system (including power cord) than the recommended safe distance. That distance is calculated according to the equation appropriate to the transmission frequency.</p> <p><b>Recommended safe distance:</b></p> $d = [3.5/3] \sqrt{P} = 1.17 \sqrt{P}$ $d = [3.5/3] \sqrt{P} = 1.17 \sqrt{P} \text{ for 80 MHz to 800 MHz}$ $d = [7.0/3] \sqrt{P} = 2.33 \sqrt{P} \text{ for 800 MHz to 2.5 GHz}$ <p>where P is the rated output of the transmitter in watts (W) as stated by the transmitter manufacturer and d is the recommended safe distance in metres (m).</p> <p>The field strength of fixed radio transmitters at all frequencies should be below the compliance level based on on-site measurements.</p> <p>Interference is possible in the vicinity of equipment that carries the following symbol.</p> <div style="text-align: center;">  </div>
Irradiated high-frequency interference as per IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3V/m	

NOTE 1: At 80 MHz and 800 MHz the higher frequency range applies.

NOTE 2: This guidance may not be applicable in all cases. The propagation of electromagnetic energy is affected by absorption and reflection by buildings, objects and people.

- ❑ The theoretical field strength of fixed transmitters such as radio telephone and mobile agricultural radio equipment base stations, amateur radio transmitters, AM and FM radio and TV transmitters cannot be precisely determined in advance. In order to determine the electromagnetic environment in respect of fixed transmitters, a study of the location should be considered. If the measured field strength at the location of the belt system exceeds the compliance levels, the belt system should be observed to verify that it is functioning as intended. If unusual performance characteristics are observed, additional measures may be required such as modifying or changing the location of the BALANCE-Trainer.
- ❑ Above the frequency range of 150 kHz to 80 MHz the field strength should be less than 3 V/m.

## Recommended safe distances between portable and mobile equipment, high-frequency telecommunications equipment and the belt system

The belt system is intended for operation in the electromagnetic environment specified below. The belt system owner or user can help to prevent electromagnetic interference by observing the minimum distances between portable and mobile high-frequency telecommunications equipment (transmitters) and the belt system as specified below (according to the output power of the communication device).

Rated output of transmitter [W]	Safe distance based on transmission frequency [m]		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	$d = 1.17 \sqrt{P}$	$d = 1.17 \sqrt{P}$	$d = 2.33 \sqrt{P}$
0,01	0.12	0.12	0.23
0,1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.70	3.70	7.37
100	11.70	11.70	23.30

For transmitters whose rated output is not specified in the above table, the distance can be determined using the appropriate equation in each case and in which P is the rated output of the transmitter in watts (W) as stated by the transmitter manufacturer.

### NOTE 1 :

For calculating the recommended safe distance from transmitters within the frequency range of 80 MHz to 2.5 GHz an additional factor of 10/3 was applied. That reduces the likelihood that a mobile/portable communications device inadvertently brought into the patient area will cause interference.

### NOTE 2:

This guidance may not be applicable in all cases. The propagation of electromagnetic energy is affected by absorption and reflection by buildings, objects and people.

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