HD rehab

HD balance

Prescriber Information | English

WE MANUFACTURE QUALITY OF LIFE

HD Rehab helps people to improve their quality of life. Our products help to create a comfortable, safe, and simple existence for users, relatives, and caregivers.

HD Rehab offers products designed to assist people with disabilities. Our primary product area is wheelchairs, which we have been designing, developing, and manufacturing for over 50 years. We never compromise when it comes to quality. Precision, safety for users and caregivers, functionality, and design are vital keywords for us. Regardless of which other wheelchair you use, you will notice the difference when you try one of our wheelchairs.

FLEXIBLE CREATIVITY IN PRODUCT DEVELOPMENT

Whether you are a user, a family member or a caregiver, we want to hear your wishes and points of view. Our designers and developers work closely together on the production of our products on our premises in Lidingö. Our creative employees use their specialist knowledge, experience, and imagination to find solutions for the unique requirements of each individual.

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1. GENERAL

1.1 Target group / Areas of use

This prescriber information is intended for those wanting some general overall information about HD Balance and the possibilities it provides prior to prescribing the product. It is just one part of the documentation that is available regarding HD Balance. Others include the *User Manual* (doc. nr. 95701-1), the *Info Sheets* (doc. nr. 95930-1-959**) and the *Table of Measurements* (doc. nr. 95719-1). All documents are based on a HD Balance wheelchair in standard configuration. It is possible to specify an alternative configuration, but care should be taken in doing so as it may entail limitations and certain risks. More information is available in the document *Risk Information* (doc. nr. 95707-1). The latest revisions of all documents are available at *hdrehab.com*.

HD Balance is a manual comfort wheelchair intended for use by persons in need of sitting comfort, support and stability that is superior to what active and all-round wheelchairs can provide. The multitude of possible settings gives the user an individually customised sitting position that is well balanced and that provides maximum pressure relief.

A complete user manual is delivered with the wheelchair. The user manual should always be available when the wheelchair is used. The abbreviated user instructions supplied in the plastic pocket on the back of the wheelchair are only intended as a supplement to the full user manual.

Functions such as seat tilt and backrest recline provide good possibilities for variation between a stable, active sitting position and relaxed resting. Be aware that sitting in the same position for a long time without change can lead to discomfort and harmful pressure. Symptoms of harmful pressure could be pain and redness of the skin that could give rise to pressure-related sores.

HD Balance is intended for use in everyday situations, both indoors and outdoors, and it can be propelled forward by the user himself/herself or the caregiver. The standard design of both the HD Balance 16 and HD Balance 24 models is very well balanced and easy to manoeuvre. A well-placed point of balance and a short wheelbase contribute to these characteristics.

If the wheelchair is to be used by several different users, each user's special requirements must be taken into consideration. Furthermore, the wheelchair's upholstery on the backrest and seat cushion should be washed or changed before each new user starts using the wheelchair. Washing instructions can be found on the upholstery.

The maximum allowable user weight is stated in the *Table of Measurements* (doc. nr. 95719-1), the *User Manual* (doc. nr. 95701-1), and is also indicated on each wheelchair.

1.2 Testing and adjusting the wheelchair

Prescription should always take place before beginning to use a HD Balance wheelchair. This applies to a new wheelchair as well as when an existing wheelchair changes users. Also be aware that a new prescription could be required if a user's disability changes or new requirements arise. All prescriptions and adjustments of the wheelchair must be carried out by authorised personnel.

HD Balance should be tested and the settings adjusted by trained personnel (Prescribers). An assessment of the user's safety should be carried out in conjunction with this process.

Instructions about how the wheelchair is to be used should be given to users, family members, assistants or caregivers at the time the wheelchair is put into use. The user card is a useful aid as part of this process, but it does not replace the carrying out of a personal review.

It is recommended to check the wheelchairs functions on a daily basis. See the *User Manual* (doc. nr. 95701-1) for more information.

2. CHASSIS

More information about measurements, how to change settings, and how accessories are assembled is available in the *User Manual* (doc. nr. 95701-1), the *Info sheets* (95930-1-959**) and the *Assembly Instructions* (95801-1-958**). The latest versions are available at hdrehab.com.

2.1 Models

HD Balance comes in two different designs; one with 24" drive wheels and one with 16" drive wheels, see Figure 1. The HD Balance 24 model, with hand rims on the wheels, is for users who can completely or partially drive the wheelchair themselves by using hand rims on the drive wheels. This model also passes somewhat more easily over obstacles such as, for example, curbs.

HD Balance 16 is a transportation model for users who do not drive the wheelchair themselves. The 16" wheels make it possible to transfer the user while remaining in a seated position, and enable the caregiver to come closer to the user in different situations. See the Chassis Info Sheet for more information.

2.2 Frame reinforcement

HD Balance is available with a reinforced design, with reinforcements on the wheel frame, seat frame and back frame for increased durability. Reinforced wheelchairsare intended for users who have a pattern of movement/behaviour that creates more strain than normal. A reinforced wheelchair can also be appropriate if the wheelchair is used extensively in a tough environment. A reinforced wheelchair can also be complemented with a shock absorbing back. See also section 3.2 *Backrest* and 6.4 *Users who place more strain on the wheelchair*.

2.3 Choice of seat width

There are four seat widths available for HD Balance: 38, 42, 46, and 50 cm. Extra side padding is available as accessories, to further adjust the seat width to suit the user. These are attached to the side supports in order to reduce the seat width. Another alternative for adjusting the seat width is spacers. These are mounted between the armrest post and the side support.

2.4 Choice of seat depth

HD Balance is available with a standard or extended seat frame. The wheelchair with the extended seat frame is equipped with an extended seat plate and an extended seat cushion. When a shorter seat depth is needed back spacers can be used to move the backrest forward by 2,5 cm. See section 4 *Accessories*.

2.5 Balancing the wheelchair

The wheelchair is well-balanced in its standard design and suits most users' requirements. One should always strive to achieve a satisfactory standard configuration, but in certain special cases the wheelchair's basic configuration may need to be changed. This should be very carefully considered, and any possible risks should be carefully assessed, in each individual case.

MOVING THE DRIVE WHEELS

The drive wheels can be assembled in two different positions, front and rear, see Figure 1. As standard the HD Balance is delivered with the drive wheels in the front position. Tests have shown that this provides a wheelchair that is easy to drive and has good stability for normal users.

For maximum stability to the back, the drive wheels can be mounted in the rear position. This provides a more stable wheelchair that is somewhat heavier to drive. If the user often sits with a significantly reclined backrest and seat, the rear wheel position should be used.

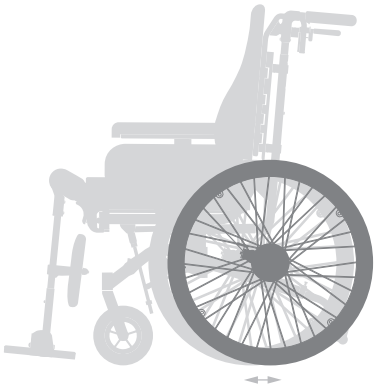


Figure 1. Drive wheels have a front and a rear position

BALANCING THE SEAT UNIT (SHIFTING THE CENTRE OF GRAVITY)

The tilt plates that connect the wheel frame and the seat frame can be exchanged for alternative varieties. The seat unit can thus be moved forward or backward. See Figure 2.

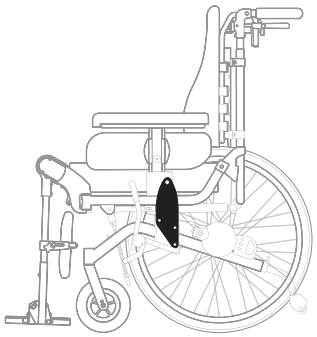


Figure 2. Tilt plates

SETTING THE HEIGHT OF THE SEAT UNIT

The height of the seat can be adjusted by changing out the tilt plates for a lower or higher version. It is also possible to lower the height of the seat on the HD Balance 24 by changing to smaller drive wheels and adjusting or changing out the castors.

- Always be aware that the risk for tipping could increase when changing the balance and height of the wheelchair

- Documents *Reference Table – balance configurations* (doc. nr. 95759-1) and *Reference Table – balancing modes* (doc. nr. 95758-1) set out the different combinations of balancing and seat height raising/lowering that are allowed, along with the limitations that such adjustments may entail. Read these documents carefully before ordering special design adjustments.

2.6 Seat tilt and backrest recline

The seat unit on HD Balance can be tilted 0 - 20 degrees, see Figure 3(a). It is even possible to increase the angle of tilt to a range of -5 - 30 degrees, but this may increase risk for tipping. It is also possible to limit the angle of tilt. See Info Sheet *Seat Tilt/Backrest Recline* (doc. nr. 95944-1) for more information.

Note than an individual risk assessment should be carried out by the prescriber in each individual case. The body shape and weight of different users affect the wheelchair balance.

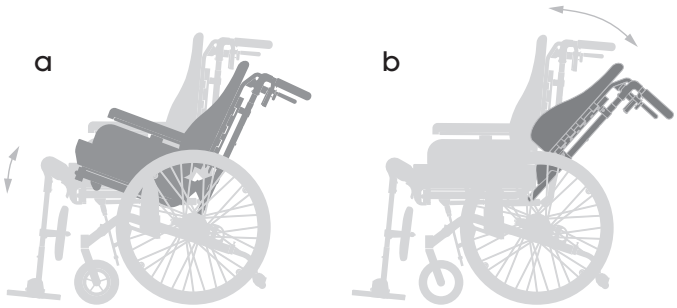


Figure 3. The seat unit can be tilted from 0 - 20° (a) the backrest reclined from 90-120° (b)

RECLINING THE BACKREST

The backrest can be continuously reclined from 90 - 120 degrees, see Figure 3(b). It is possible to increase the backrest recline to 90 - 135 degrees but note that this can increase the risk of tipping. The angle of the backrest is regulated with the aid of a gas spring that is assembled under the seat of the wheelchair. The gas spring provides a lifting force that helps with the raising of the backrest. The possibility to regulate the angle of the backrest can be taken away and replaced with a fixed angle backrest that can be set to an angle between 90 and 105 degrees. This can be specified when the wheelchair is ordered, or the change can be made by an authorised technician at a later time.

CONTROLS

The seat tilt control is green and is located on the right-hand side of the push bar, while the backrest recline control is grey and is located on the left-hand side of the push bar. Each of these controls should be adjusted individually, in other words not at the same time. Use only moderate force when adjusting the controls.

ELECTRIC CONTROLS

HD Balance can be equipped with electric controls for seat tilt and backrest recline, which makes it possible for the user to independently to change the seating position.

Note: When electric controls are equipped the seat tilt cannot be reduced or increased from the stand 0 - 20 degrees, and likewise the backrest recline is always 90 - 120 degrees.

2.7 Wheels

HD Balance is available in two models: HD Balance 16, with 16" rear wheels, and HD Balance 24, with 24" rear wheels. Both models are equipped with 7" (175 mm) front castors. All tyres on HD Balance wheelchairs, regardless of model, are solid and puncture proof PUR as standard.

As an alternative, tyres with a Flexel tube are available to make the wheelchair easier to manoeuvre when the user is heavy. Pneumatic tyres are also an option.

The drive wheels are removable with a quick release function.

2.8 Hand rims

The hand rims on HD Balance are made of aluminium as standard. As an alternative it is possible to order other hand rims that are plastic-coated for better grip, or hand rims in stainless steel that are more durable than the aluminium. The hand rims may not be removed as they contribute to the strength of the wheel construction. The total width of the wheelchair can instead be narrowed by moving the hand rims closer to the wheels (Narrow positioned hand rims) and/or changing out the castor axle pins for a shorter version.

2.9 Brakes

HD Balance is equipped as standard with a combined main brake and parking brake (the caregiver brake). The HD Balance 24 model is also equipped with separate parking/user brakes.

COMBINED MAIN BRAKE AND PARKING BRAKE

The brake handles are located under the push bar and are operated from behind the wheelchair. The parking brake consists of a sleeve that can be pushed forward to lock the brake.

PARKING BRAKE / USER BRAKE

On the HD Balance 24 model there is a separate parking brake for the user, also optionally available for HD Balance 16. This brake is a tyre brake. If the user has difficulty reaching the brake lever or is not strong enough to operate the standard lever, longer brake levers can be ordered.

2.10 Push bar side units

HD Balance is equipped as standard with push bar side units with integrated caregiver brakes.

Angle-adjustable side units are available as alternative. These can be set to 3 different positions to better suit the height of the caregiver and the users seating position.

All types of push bar side units can be raised and lowered to 3 different positions using snap locks in the back frame tubes. Extended side units (+12 cm) are available if the caregiver who will be driving the wheelchair is tall.

2.11 Push bar / Operating handles

HD Balance is equipped as standard with a push bar attached to the side units.

As alternatives it is possible to order an extra-depth push bar, a push bar that is both elevated and bowed, or separate operating handles.

EXTRA-DEPTH PUSH BAR can be selected if, for example, a power pack is to be used.

EXTENDED AND BOWED PUSH BAR can be selected if the user will mostly be using the wheelchair in the tilted seat and/or reclined backrest mode.

SEPARATE OPERATING HANDLES can be selected if, for example, a stair climber is to be used.

2.12 Anti-tip device

An anti-tip device is part of the standard equipment on all HD Balance models. Note that the anti-tip device for the 16" model is somewhat different in design from the anti-tip device for the 24" model. Be sure to use the right anti-tip device for the right model.

The height of the anti-tip device can be set to three different positions and it can also be turned and locked into inactive mode, for example when passing over a curb or doorstep. The anti-tip device should always be fully extended in active mode when there is a risk of tipping backwards, and it is critical to remember to turn it back and lock in active position again after using the inactive mode.

Placing a foot against the anti-tip device provides the caregiver with firm footing when, for example, the wheelchair is to be tipped up on to its rear wheels.

Note: The risk for tipping can vary depending on the weight, body shape and placement of the user in the chair. Other factors that affect the risk of tipping include the angle at which the seat is tilted, the angle at which the backrest is reclined, the angle of the leg rests, the placement of the rear wheels, and any additional load being placed on the backrest. The risk for tipping should always be checked in relation to the situation in which the wheelchair is being used at any given time, and the anti-tip device settings should be adjusted accordingly. **The wheelchair cannot be used without the anti-tip device.**

3. SEAT UNIT

More information about measurements, settings, and how to assemble accessories is found in the *User Manual* (doc. nr. 95701-1), the *Info Sheets* (doc. nr. 95930-1 - 959**-1), and the *Assembly Instructions* (doc. nr. 95801-1- 958**-1).

3.1 Seat

HD Balance is equipped with a depth-adjustable seat plate to provide the user with a good support area and maximum pressure distribution. The depth is adjusted via a lever located under the seat plate. The seat plate is equipped with velcro for attaching the seat cushion.

SEAT CUSHION

HD Balance is equipped with a formed seat cushion made of foam with a seat indentation, thigh support, and pommel. The front edge is angled with an overhang which minimises the risk for pressure on the hollow of the knee. The seat cushion is attached to the seat plate with velcro.

There are three alternatives for seat cushion upholstery: grey Trevira (standard), black Trevira, and Hygiene (disinfectable). Extra covers with incontinence protection are available, in black Trevira. These are fitted over the existing seat cover to provide an extra, washable layer of protection.

3.2 Backrest

FLEXI BACKREST SYSTEM

HD Balance is equipped as standard with the Flexi backrest system. The Flexi backrest system consists of the Flexi backrest frame with seven adjustable straps as well as the Flexi backrest cushion. The straps can be adjusted to provide the user with good pelvic and lumbar support. It is also possible to create extra space for the user's backside or hunched back by loosening the straps. Good side support for users who lean to the side can be achieved by loosening all the straps and scooping the backrest cushion. The Flexi backrest system is also available in an extended version for tall users. See the *User Manual* (doc. nr. 95701-1) for information about how to adjust the Flexi backrest system. If additional support for the trunk is required, a thoracic support can be used. See section 4 *Accessories*.

FLAT BACKREST

As an alternative to the Flexi backrest system it is possible to order a flat backrest consisting of a solid backrest plate in aluminium. This is also available in an extended version for tall users.

ADJUSTING THE HEIGHT OF THE BACKREST

There are two ways to adjust the height of the backrest. One way is via the tracks in the Flexi frame for step-less height adjustment. If further height adjustments are required, the backrest brackets can also be moved somewhat along the backrest frame's side tubes.

BACKREST CUSHION

The Flexi backrest cushion is made of foam, with side wings in order to provide soft but stable side support. As an alternative, a flat backrest cushion without wings is available. The same backrest cushions that are used with the Flexi backrest system are also used with the flat backrest. There are three alternatives available for the backrest cushion's upholstery: grey Trevira (standard), black Trevira, and Hygiene (disinfectable).

SHOCK ABSORBING BACK

It is also possible to add a more flexible backrest to the wheelchair. This saves wear and tear on the wheelchair's components for users with, for example, a high degree of hypertonia/spasticity. The suitability of a shock absorbing back must be assessed in each individual case.

3.3 Alternative backrest width

HD Balance can be equipped with a wider backrest to provide better support for users with broad shoulders and narrow hips. It is also possible to equip the wheelchair with a narrower backrest for users who have a narrow upper body but are wider around the hips and backside.

When a wider backrest is used there is some restriction to the depth settings of the armrests.

3.4 Leg rests

There are two varieties of leg rest available: fixed angle and adjustable angle. As an alternative it is also possible to order amputee leg rests.

The HD Balance wheel frame is designed in such a way that all types of leg rest can be used at 90 degrees with the standard configuration of the wheelchair, without interference with the castors. The 90 degree position is useful, for example, when the user has knee contractures, or in order to break up the stretch spasticity in the legs. Leg rests are available in three different lengths: standard, short and long. See the Info Sheet *Leg Rests* (doc. nr. 95933-1) for more information.

ADJUSTABLE ANGLE LEG RESTS

Adjustable angle leg rests consist of an upper leg rest, a calf support and a footrest. The leg rests can be mounted and removed in a simple manner using only one hand, without the user's lower legs needing to be stretched or straightened out. The leg rests are adjustable from 90 – 180 degrees. The placement of the leg rest's centre of rotation means that the length of the leg rest generally does not need to be adjusted when the angle is altered (length-compensating).

FIXED ANGLE LEG RESTS

Fixed angle leg rests are available as an alternative to the adjustable angle leg rests and consist of an upper leg rest, a calf support and a footrest. As with the adjustable angle leg rests, the fixed angle leg rests can be mounted and removed in a simple manner using only one hand, without the user's lower legs needing to be stretched or straightened out. The fixed angle leg rests are available in a 90° and 105° design as standard, although they can also be specially made at a different angle when necessary.

AMPUTEE LEG RESTS

Adjustable angle amputee leg rests are available as accessories and can be adjusted to an angle between 140 – 180 degrees. Amputee leg rests are removable and can be turned out sideways. The height, depth, and lateral position of the leg rests padded calf plate is adjustable.

RELEASABLE KNEE JOINT

This makes it possible to adjust the angle of the leg rests from one side when a One piece footrest or Foot box is used. Angle adjustment can thus be done by a single caregiver.

3.5 Calf supports and footrests

CALF SUPPORTS

Separate calf supports are included as standard for HD Balance. Alternatives include one-piece calf support, calf panel, or calf strap. Height, depth, and angle are adjustable for the separate and the one-piece calf support.

There are also two alternate versions of the separate calf supports which are deeper (3 or 5 cm). The one-piece calf support is available in a version which is 3 cm deeper.

FOOTRESTS

HD Balance features separate footrests as standard. These can be adjusted in height, depth and angle. As alternatives, it is possible to order a one-piece footrest or foot box. Both of these are height and angle-adjustable.

All footrests can be used with both the adjustable angle and the fixed angle leg rests. A shorter footrest is available for users with short legs. For more information about combining long and short footrests with different lengths of leg rest see the Info Sheet *Leg Rests* (doc. nr. 95933-1).

3.6 Armrests

There are three varieties of armrest available: the standard armrest, the wide armrest, and the hemiplegia armrest. The standard and wide armrests are also available in low versions for short users or those with a collapsed sitting position.

STANDARD ARMRESTS

The standard armrest consists of a height- and depth-adjustable padded armrest plate and a padded side support. The height and depth of the armrest plate can be adjusted without the use of tools. When it comes to the height setting there is a graduated scale so that the armrests can easily be set to the same height. The depth of the armrest plate can be regulated to provide support for the user's elbows in different sitting positions. For example, the armrest plates can be pushed forward to provide support when getting up from the chair, and they can be pushed back when the user needs to get close to a table.

WIDE ARMRESTS

The wide armrest consists of a padded arm support and a padded side support. The armrest pad is wider at the back and is softer than the standard armrest. The wider armrest support gives a better support area for users whose arms are further out from their body.

HEMIPLEGIA ARMRESTS

Hemiplegia armrests are available in both a right-handed and left-handed version and consist of a padded upper armrest and a padded side support. The armrest is shaped to provide support to the user's arms and can be adjusted in height, depth and width. It can also be rotated in front of the body. Hemiplegia armrests are used, for example, for users who lean to one side, who have pain in their arm/shoulder, or who have their arm in a cast.

LONG SIDE SUPPORT

Armrests can be equipped with a longer, straight side support that provides a soft support along the thigh. A longer side support can also prevent the knee from pressing against the upper part of the legrest.

WEDGE-SHAPED SIDE SUPPORTS

As an alternative, the standard armrests can be equipped with wedge-shaped padded side supports. In the case of external rotation/abduction of the hips, these side supports straighten up the user's thighs to a parallel position. The pressure is distributed along the thighs, and the pressure point at the knee joints is reduced. The wedge-shaped side supports are somewhat longer than the standard side supports and are available in two different angles, 4° and 7°.

SIDE SUPPORT WITH POST

A side support with post, where the armrest pad has been removed, gives the user more freedom of movement and the possibility to get a better grip on the drive rings. A better grip makes it possible to use more strength to drive the wheelchair.

4. ACCESSORIES

Below is a list of the accessories that are available for HD Balance. Read the latest version of the relevant info sheet carefully before selecting and using an accessory. The latest versions of the info sheets are available at hdrehab.com.

An assessment must always be done as to whether an accessory might entail increased risks for the user or others before a decision about the use of the accessory is made. For example, it could be a matter of the risk of the user getting pinched, of getting stuck between the accessory and the wheelchair, or an increased risk of the wheelchair tipping over. The assessment of potential risks is particularly important when it comes to users with unusual patterns of movement, such as in the case of users with spasticity, exaggerated movements, etc.

HEADRESTS AND NECK RESTS

Two alternative means of supporting the user's head/neck are available: headrest and neck rest. The headrest provides a larger and deeper support for the head. The neck rest is smaller and softer, and provides support for the back of the neck. Headrest Side and Neck rest Side are also available with a sideways-adjustable head support cushion to accommodate different users positioning needs. Headrest Side+ and Neck rest Side+ also include brackets for side supports. Side supports can be used on one or both sides, for example to give support for a user who leans sideways. The side supports for the headrest are available with fixed angle and with adjustable angle. For the neck rest side supports are available with adjustable angle.

EXTRA SIDE PADDING

Extra side padding enables adjustment of the width of the seat to suit the user and provide extra stability for the hips and thighs. Each padsis attached to the inside of the side support on the armrest by a pocket at the front and velcro at the back.

SIDE SUPPORT SPACERS

Side support spacers are attached between the side support and armrest post as another method for adjusting the seat width. In combination with extra side padding the HD Balance with seat width 38 cm can be adjusted to 34 cm. The spacers can also be used instead of extra side padding if the wheelchair is equipped with wedge side supports.

BACK SPACERS

Back spacers move the back rest forward to give a shorter seat depth than can be achieved by adjusting the seat plate. Their use entails risk, see *Risk Information* (doc.nr. 95707-1) and the Assembly Instructions *Back Spacers* (doc.nr. 95831-1).

BACK WEDGE

For some types of rotations or misalignments in the user's back the back cushion may need to be pushed forward on one side to provide optimal support. In these cases a back wedge can be used behind the back cushion to support the user's torso.

LOCKABLE BACK RECLINE

It is possible to lock the back recline at a particular angle with a lock which is mounted at the controls. Existing wheelchairs can be equipped with lockable recline angle.

ELASTIC SEAT COVER

The elastic seat cover is pulled over the wheelchair's existing upholstered seat cover as a protection. This facilitates the washing and quick changing of the seat cover. The additional cover's upholstery is black Trevira and is protected for incontinence.

TABLE TRAYS

Table trays are available in wood (oak) and PC (polycarbonate), with space for the trunk. Both varieties of table tray can be ordered with pads for the elbows. The table trays have a raised ege that prevents objects from falling off.

Support tray (padded) is available if the user needs a soft support under the arms.

Mug tray can be used as an option when a smaller support area is desired. This tray can be rotated outward and has a holder suitable for a mug.

The table tray brackets are available in two versions, standard (not lockable) and lockable. The mug tray has a mounting mechanism with a rotation lock.

POSITIONING BELTS

There are two varieties of positioning belt available: a 2-point belt with two attachment points, and a 4-point belt with four attachment points. The length of the belt is adjustable, with two draw straps that are pulled from the middle. The belt mounts are ordered separately and are used to mount the belt onto the wheelchair's seat frame in the desired position.

CHEST HARNESS BRACKET

The chest harness bracket is intended to provide attachment points for various chest harnesses and similar products. The chest harness bracket is assembled onto the wheelchair's backrest system, and both sides of the chest harness bracket are individually adjustable in terms of height, width and angle.

THORACIC SUPPORT

There are three varieties of thoracic support available: standard, adjustable, and adjustable mini. These are used to provide the user with a more stable sitting position, and to prevent the user from leaning to the side or at a forward angle. The thoracic support is available with different mounts and in different sizes to suit users of varying needs. All types of thoracic support have the swing-away function, which allows thoracic support cushion to be turned outward, for example in a user transfer situation. The mounts for the thoracic support are ordered separately or together with the thoracic support.

SHOULDER SUPPORT

The shoulder support consists of a shoulder support cushion, shoulder support mount, and frame mount. A shoulder support is used to give support and improve the users position/balance, and to prevent the user from leaning to the side. The shoulder support cushion can be adjusted in height, depth, and angle, as well as rotation in two planes, making it possible to evenly distribute pressure along the upper arm. With a button release the shoulder support can easily be turned outward during user transfer (swing-away function).

COAMING FOR ARMREST

The coaming for the armrest is assembled onto the armrest rail and prevents the user's arm from sliding off the armrest pad backwards or to the side. The coaming can be useful in a reclined sitting position or if the user's arm is weak, for example after a stroke.

ARMREST LOCK

The armrest lock makes it possible to easily lock the armrest unit in place on the seat frame when this need exists.

SIDE SUPPORT COVER

Side support cover is a thin cover that fits over the side support of the armrest and is closed with a zipper. It is intended for users who require a softer surface against the leg.

FOOTREST SIDE + COVER

Footrest sides are mounted on separate foot plate holders and are used for users who, for example, need protection from involuntary foot and leg movements.

Padded coverings are available for the footrest sides if a softer surface is desired. These are fitted over the sides and are held in place with velcro.

HEEL STRAPS

The heel straps prevent the user's feet from sliding backwards off the footrests. They are assembled via the two rear holes on the footrests.

PADDING FOR FOOTRESTS

Padding for the footrests is fitted over the footrests and held in place with velcro. The padding provides a soft base for the user's feet when sitting in the wheelchair without shoes. Padding is available for both one-piece and separate footrests.

POMMELS

There are two varieties of pommel available, standard and forward mounted, and they are available in two sizes, large and small. They are used to provide support to or separate the user's legs, and are height-adjustable. The standard variety is also depth-adjustable. The pommel mount is assembled onto the seat plate.

SPOKE PROTECTION

Spoke protection can be assembled on 24" and 20" drive wheels. The spokes are shielded behind a transparent plastic disc to reduce the risk of injuries to hands and fingers.

WHEEL COVERS

For 16" drive wheels, wheel covers are available to cover the upper half of the wheel. They consist of brackets attached to the wheel frame and covers which are bolted to the brackets.

BAG HOOK

The bag hook is assembled onto the push bar and is intended for use with lighter types of bags and other such items.

Remember that the risk for tipping increases if more weight is applied to the wheelchair and/or if the wheelchair's seat and/or backrest are angled backwards.

PROFILE STOP

The profile stop is a clamp that is attached around the headrest's/neck rest's bracket or the thoracic support's bracket. It is used as a "reminder" to facilitate the placement of the headrest/neck rest or thoracic support in exactly the same position as the prescriber has set.

IV POLE

The IV pole gives the user the possibility to sit up in the wheelchair when an IV drip or tube feeding is being administered. When the seat is tilted and/or the backrest is reclined, the angle of the mount is adjusted to keep the IV pole vertical. The IV pole is removable. The IV pole entails an increased risk of tipping, especially in case of heavy drip bags and when the seat is tilted.

OXYGEN TANK HOLDER

The oxygen tank holder is available in two different sizes, for oxygen tanks up to 2,5 L. The oxygen tank holder is held in place by a bracket mounted to the back frame of the wheelchair. The holder with tank can easily be lifted off the bracket to follow with the user when transferring.

5. TOOLS/ASSEMBLY

The most common settings on a HD Balance wheelchair can be adjusted without tools.

The prescriber may require tools when first setting up the wheelchair for a new user. A two-sided wrench, 10 and 13 mm, is included under the seat plate. This wrench can be used for most of the set-up adjustments.

Mounting and adjustment of certain accessories can require an open wrench, Phillips screwdriver, slot screwdriver, or Allen wrenches. These tools are not included with the wheelchair.

6. ADDITIONAL INFORMATION

6.1 Care and maintenance

In order to achieve the best safety and a long product life, the wheelchair should be kept clean and in good condition. See *Maintenance Instructions* (doc. nr. 95730-1) for more information. All upholstery for the cushions and accessories is washable at 60°C (washing instructions can be found on the inside of the upholstery). Any faults that arise should be rectified immediately. How the wheelchair is used affects the need for maintenance. In situations of strenuous use in the case of, for example, users with a high degree of hypertonia and special patterns of movement, or when the wheelchair is outside extensively, more regular maintenance of the wheelchair is required. The estimated life of the product when used normally by one and the same user is ten years. This assumes that the wheelchair is cared for and maintained in accordance with the instructions provided in the user manual and the maintenance instructions.

When using a power pack in the case of frame reinforcements and other special design adaptations to the wheelchair, and in the case of extreme use, the estimated life of the product is reduced to 5 years. In such cases the care and maintenance should be carried more frequently.

6.2 Ergonomics & Patient safety

HD Balance is equipped with scales that indicate the current angle of the seat and the backrest, the angle of the knee joint, the height of the armrests, and the seat depth. These scales improve the safety of the patient by reducing the risk for the patient sitting in an incorrect position. In respect to these scales there is a user card on which the prescriber can document the recommended settings for the user. This is an effective communication tool for prescribers and caregivers/ relatives/users. User cards can be ordered separately if they need to be replaced.

HD Balance is ergonomic for caregivers. The wheelchair's short wheelbase contributes to good handling characteristics when it comes to driving and manoeuvring the wheelchair. The balance of the frames allows for very little effort to tilt the seat unit. The seat tilt and backrest recline controls are positioned so that they are easy to reach, and one can maintain grip on the push bar while adjusting these controls. The positioning of the controls also contributes to a more symmetrical working position for the caregiver.

6.3 Transportation in vehicles

HD Balance is tested and approved, in accordance with ISO 7176-19:2008, for the transportation of users in vehicles while they are strapped in to the wheelchair. A headrest/neck rest should be used when travelling in a vehicle. The instructions provided in the user manual must be followed carefully. The wheel frame has built-in attachment points for transportation. The front attachment points are marked on the front part of the wheel frame.

HD Balance can easily be collapsed for transport. See *Table of Measurements* (doc. nr. 95719-1) for the dimensions relevant to transportation situations.

6.4 Users who place more strain on the wheelchair

If the user has a pattern of movement/behaviour that places more strain on the wheelchair than normal, the user should be prescribed a wheelchair with a reinforced design. This applies to users with, for example, a high degree of hypertonia/spasticity, extensive use in tough environments, or handling in a way that is significantly different from normal. To improve durability the wheelchair has a reinforced wheel frame, seat frame, and back frame.

The wheelchair should also be equipped with a shock absorbing back. The use of a shock absorbing back must be assessed in each individual case as it is not suitable for all users. See the Info Sheet *Configurations for severe load from user* (doc. nr. 95946-1).

Leg rests with one piece footrests, one piece calf supports, or foot box should be used for users with a high degree of hypertonia/spasticity. This increases the strength and stability of the leg rests. Where possible, use leg rests with fixed angle for maximum strength.

Users that create extra strain and/or stressful use raise the demands on the wheelchair and its components. A reinforced wheelchair therefore requires more frequent and more thorough maintenance, and the expected lifetime is shortened.

6.5 Permitted changes and combination agreements

The use of other suppliers products together with HD Balance is regulated by way of combination agreements. Instructions and recommendations from HD Rehab must be followed in order for the CE marking to be valid. The document *Changes permitted while maintaining CE Marking* (doc. nr. 95724-1) specifies which changes are permitted to be made to HD Balance while still retaining the validity of the CE marking. The document *List of combination agreements* (doc. nr. 95232) specifies the combination agreements that are in place. These documents are available at hdrehab.com, and are updated on an on-going basis.

6.6 Special adaptation

If a user requires further special adjustments to his/her wheelchair, in addition to the alternatives provided for in the standard product range, HD Rehab can make specially customised products. More information about this is found in the document *Information about custom-made products* (doc. nr. 95431-1) and *Workflow for Special adaptations* (doc. nr. 95433-1). These documents are available at hdrehab.com, and are updated on an on-going basis.

6.7 Other documentation

The following documentation (and more) is available for HD Balance:

95701-1 User Manual

95707-1 Risk information - Configurations and Accessories

95710-1 Condensed User Manual

95717-1 Overview - Configurations

95718-1 Overview - Accessories

95719-1 Table of Measurements

95720-1 Technical Information

95724-1 Changes permitted

95725-1 Reconditioning guide

95730-1 Maintenance schedule

95758-1 Reference table - Balancing modes

95759-1 Reference table - Balance configurations

95764-1 Labeling

95801-1 - 958** Assembly instructions

95930-1 - 959** Info sheets

The latest versions of these and other useful documents are available at hdrehab.com.

7. OVERVIEW OF OPTIONS

Tables 1, 2 and 3 below provide an overview of the options and settings available for HD Balance. Note that some of these alternatives could affect set-up possibilities or restrict use. Refer to the relevant Info Sheet for each section when making decisions regarding configuration.

Table 1 - Options to be chosen at the time of ordering, cannot be altered later

Model	16	24		
Seat width	38	42	46	50
Length Seat frame	Standard. (45-55 cm)	Extended (50-60 cm)		
Frame reinforcement	Standard	Reinforced Seat-, Back- and Wheel frame		

Table 2 - Options that can be chosen at the time of ordering or can be replaced/changed later by authorised technical personnel

Balancing of seat unit	Std Placement	Forward (3 cm)	Back (3 cm)		
Position of wheel	Std placement	Back position (5 cm)			
Seat height	Std placement	Raised (5 cm)	Lowered (3 cm)	Lowered (4cm) (20" wheels)	
Seat tilt	Std 0 - 20 °	-5 - 20 °	0 - 30 °	-5 - 30 °	
Backrest angle	Std 90 - 120 °	Increased 90 - 135 °	Fixed 90 - 105 °	Fixed 105 - 120 °	
Backrest angle Shock absorbing	Std 90 - 120 °	Fixed 90 - 105 °	Fixed 105 - 120 °		
Push bar Side unit	Standard	Increased height	Adjustable angle		
Brakes	Std Caregiver brake	User brake Std on 24"	User brake Option for 16"	Without user brake	
Push bar / handles	Push bar std	Push bar extra depth	Push bar elevated & bowed	Separate handles	
Seat cushion	Standard	Extended	Without cushion		
Seat width	Reduced 2 cm (Side pads)	Reduced 2 cm (Spacers)			
Backrest system	Std Flexi	Flexi Extended	Flat	Flat extended	Without backrest
Backrest width	Same as Seat width	Wide + 4 cm	Wide + 8 cm	Narrow - 4 cm	
Backrest cushion	Std with side supports	Std without side supports	Extended with side supports	Extended w/o side supports	Without cushion
Leg rests	Std Adjustable angle	Amputee	Fixed angle 90°	Fixed angle 105 °	Without leg rests
Leg rest length	Standard	Short	Long		
Calf support	Std Separate	One piece	Calf panel	Calf strap	Without calf supp.
Footrest	Std Separate	One piece	Foot box	Without footr.	
Footrest length	Standard	Short			

Table 2 (Continued)

Armrests	Standard	Wide	Low Height	Wide low height	Without armrests
Hemiplegia armrest	Low	High			
Armrest Side supports	Standard	Wedge 7°	Wedge 4°	Long	Side support with post
Tyres	Standard PUR	PUR narrow (24" only)	Pneumatic	Flexel	
Hand rims	Std Aluminium	Stainless steel	Soft grip		
Position of hand rims	Standard	Narrow			

Table 3 - Settings that can be adjusted by the prescriber during the setup of the wheelchair

Seat tilt	Activation of forward tilt, max -5°			
Seat	Depth, 7 Pos.			
Backrest height	Adjust backrest system	Adjust backrest brackets		
Backrest shape, 7-8 straps	Individually adjustable to suit user			
Brake, Tilt lock	Individually adjustable per user weight			
Armrest std	Height	Depth		
Armrest hemiplegia	Height	Depth	Width	Rotation
Leg rest adjustable angle	Angle			
Leg rest amputee	Height	Depth	Width	Angle
Calf support	Height	Depth	Width	Angle
Footrest	Height	Depth	Angle	
Push bar	Height	Angle (only angle adjustable model)		

For settings of accessories see respective Info Sheets.

8. PROBLEM SOLVER

The problem solver suggests solutions for prescribers to achieve with the best possible sitting position or to satisfy the requirements that exist. It can also be used to help solve problems that may arise on account of the user's patterns of movement or the nature of the surroundings.

It is always the responsibility of the prescriber to carry out an assessment of the user's situation and to decide which measures are appropriate in each individual case.

Section 1: Users body	
User is tall	• Extended seat depth • Extended height, backrest system • Long leg rest length • Increased seat height
User is short	• Short leg rest/Footrest length • Reduced seat depth (back spacers) • Lowered seat height (e.g. upright transfer)
User has narrow hips and broad shoulders	• extra side paddings • Side support spacers • Wide backrest system, +4 or +8 cm
User has broad hips and narrow shoulders	• Narrow backrest system, -4 cm
User's centre of gravity is forward, e.g. abdominal obesity	• More scooped out Flexi back • Back mounted seat unit • Restricted tilt forward
User's centre of gravity is back, e.g. leg amputation	• Rear positioned drive wheels • Forward mounted seat unit • Limit the angle of seat tilt backward • Anti-tip protectors fully extended
User has a large backside	• Select Flexi backrest system instead of Flat backrest system • Loosen the Flexi backrest straps to create space for the backside • Raise the back system to make space for the backside
User has an enlarged thoracic cavity	• Loosen the Flexi backrest straps to create space for the thoracic cavity • Consider a somewhat open backrest angle to elevate the line of vision • Supporting tray table
User has a rotation in the upper body	• Back wedge behind the back cushion to give support to the forward rotated side

Section 2: Sitting problems that can arise	
User slides forward on the seat	• Correct seat depth, backrest height, armrest height and leg rest position • Correct seat tilt and backrest angle • Consider reducing the angle of the leg rests • Consider tilting the user's pelvis forward with the help of the Flexi backrest straps • 2-point or 4-point positioning belt
User leans to the side	• Loosen the flexi backrest straps to give support from the side • Flexi backrest cushion with side support sings • Thoracic support, standard or adjustable • Shoulder support • Hemiplegia armrest • 2-point or 4-point positioning belt • Table tray or supporting table • Coaming for armrest
User's arm falls outside the armrests	• Coaming for armrest • Shoulder support • Wide armrest

User's head hangs forward	• Choose suitable flexi backrest settings depending on he reason • Chest harness + positioning belt • Table tray or supporting table • Extended headrest tube
User presses knees against the leg rest knee joints	• Wedge side supports 4° or 7° • Long side support
User's legs come between the calf supports	• Lateral adjustment of separate calf supports • On-piece calf support • Foot box • Calf panel • Calf strap
User's legs get stuck between the footrests	• One-piece footrest • Foot box
User's legs come outside the leg rest to the side	• Foot box • Foot rest side

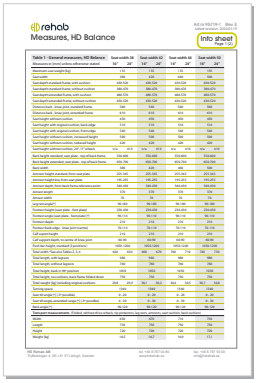
Section 3: User requirements / Use of the wheelchair	
User moves the wheelchair independently	• Side support with post (wihtout armrest pad) • Lower the seat unit • Consider a somewhat shorter seat depth
User makes upright transfers	• Unlock forward seat tilt (-5°) • Correct height for the seat unit • Arm rest pads in a forward position (support for pushing out)
User requires a more reclined position in the wheelchair	• Extended seat tilt 30° • Increased back recline 135°
User cannot or should not change the position of his/her hips	• Fixed angle backrest • Deactivate the backrest recline control • Lockable back recline angle
User requires gentle adjustment of the backrest	• Select a flat backrest on which to build the gentle adjustment (special adaptation)
Wheelchair is too wide for e.g. door openings	• Narrow positioned hand rims in combination with short castor pins
User has a behaviour that places more strain on the wheelchair	• Reinforced frame • Shock absorbing back • Fixed angle leg rests • One-piece calf support • One-piece footrest • Foot box • Push bar instead of separate handles
Wheelchair is used in a tough or demanding environment	• Reinforced frame • Fixed angle leg rests • One-piece calf support • One-piece footrest • Foot box • Push bar instead of separate handles • Flexel drive wheels • Stainless steel hand rims

Section 4: Caregiver requirements	
Push bar is too low for caregiver even in highest possible position	• Side unit, extended height • Adjustable angle push bar
Push bar is too low due to reclined position	• Push bar, elevated & bowed • Adjustable angle push bar
Caregiver bangs toes on power pack mounted under wheelchair	• Push bar, extended depth
Wheelchair's push bar prevents the use of a stair climber	• Separate operating handles

FURTHER READING

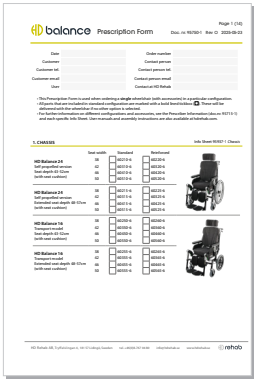
User Manual
HD Balance
95701-1

Table of Measurements
95719-1



Info Sheets
95930 -

Prescription Form
95750-1



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Prescriber Information
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