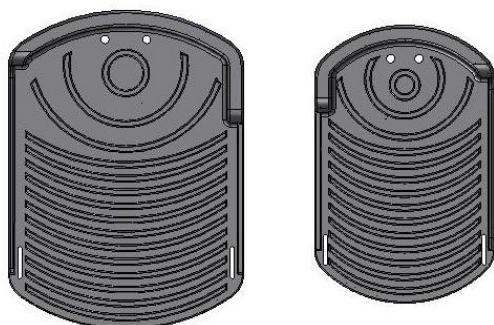
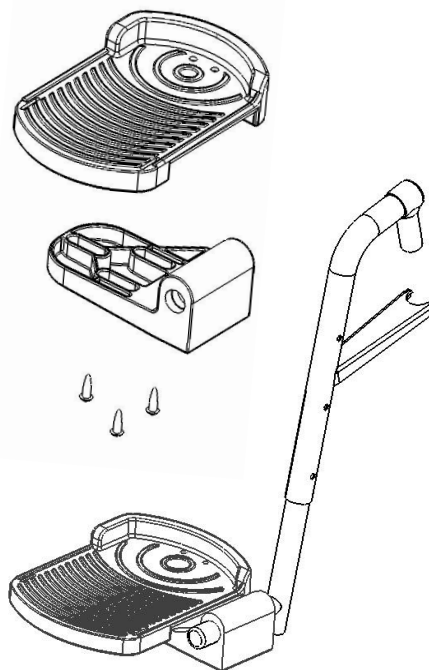


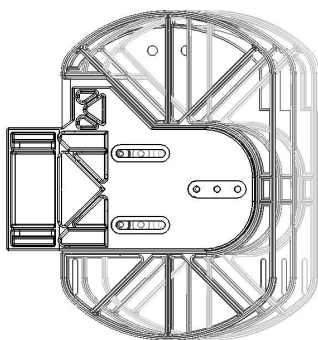
GREENCARE DB1 – FOOTRESTS

Footrest Size and Configuration.

DB1 footrest is a two part moulded assembly, consisting of an underside support bracket and an upper foot support plate. The upper footplate is adjustable sideways, allowing it to be positioned in alignment with the preferred occupant foot position. Assembly shown in drawing on the right. The two sizes of support bracket and footplate are shown below. They are all interchangeable.



Footrest bracket assemblies are located in the sideframe by an upper pivot moulding, secured to the aluminium tube bracket by an internal screw, accessible from the underside with a long pozi screwdriver.



The upper pivot locates in the top of the front frame tube, and swivels around. Footrest brackets are aligned on guide locking features on the front frame tube. There are two types of bracket, cling on aluminium for most adaptations, and swingaway moulded brackets for ease of occupant release. These different types are interchangeable, allowing retrospective fitting of adaptations as needed. Front fixing location types are shown below.



Swingaway fixing is shown left, protrusion is more than cling on fixing, shown centre. Reduced protrusion can be a useful difference for a foot propeller, reducing risk of adverse leg contact. Picture on the right shows a footrest assembled with a collar to prevent complete removal from the wheelchair, a requirement for hospital chairs, where loose components can be misplaced.

GREENCARE DB1 – FOOTRESTS

Footrest Assembly

Foot supports heel out on an injection moulded M6 jacking screw assembly, at the end of the footrest stem. By releasing the locking nut, this can be moved in or out to provide an angular stop for the footplate. Heavy occupants will deflect footplates more than lightweight occupants, and it is recommended that the setting of this stop point, on heavy occupant chairs, is slightly upward to allow for deflection when the load is applied. Routine service checks should examine security and alignment of footplates.

The complete modular footplate assembly is retained in its alignment position on the stem pivot tube by a swaged form feature. Removal and replacement of footplate assemblies requires the use of a soft mallet. A plastic end cap is pushed into position on the end of the stem swivel to trim off this assembly.

Height adjustment of the footplate is achieved by an M6 screw that locates through three holes in the swivelling bracket tube to engage with a five hole pattern in the internal stem tube, providing a wide height adjustment range.

There is a choice of angles for the footrest bracket, achieved through different tube bend sizes.

- 90 degree
- 105 degree
- 110 degree
- 115 degree.

The standard 110-degree bracket is the general default build setting, and is the only size available in the swingaway moulded configuration.



The most compact angle footrest brackets are also shorter, and are frequently used in conjunction with the 150mm castor wheel, on low seat to ground builds, or where turning space is restricted.

Wheelchairs can be configured with different angle and positioned footrests to each side to accommodate specific occupant needs. An example of this is shown on the left.

GREENCARE DB1 – FOOTRESTS

Footrest Assembly Options

The swingaway footrest is available in an adapted version incorporating an adjustable position knee pad into the bracket assembly. Shown right.



When the footrest is swung to the forward facing latched position, the pad can be set to apply a controlling pressure to the side of the occupant leg in the knee area. Shown left



A footbar, shown right can be used to rigidise the front frame, typically for a more active user, who can transfer in from the side. This fits into standard footrest location fittings, and is removable for folding. The footbar can be mounted forwards or rearwards by reversing the supporting tubes, to achieve a required occupant foot position. A velcro fixed calf support strap is frequently fitted with the footbar to locate the occupant leg.



Greencare DB1 footbar is telescopically expandable, with fixing slots on the underside. Two sizes of central connecting bar cover seat widths to 26 inches.

Further adaptation is possible by addition of footplates screwed directly into the cross tube. This adaptation is frequently used for occupants with a history of damaging footrests through spasm, shown left

The picture on the right shows detail strength improvements made to the swingaway trigger moulding in 2013. Note the section increase at the neck of the trigger. This improvement was made to accommodate additional leverage forces applied when an optional adaptation with an extended handle is fitted, for occupants with reach difficulties.



GREENCARE DB1 – FOOTRESTS

Footrest Assembly Options

A footbar that has been assembled with footplates can be further adapted into two separate swingaway type left and right footrests to allow frontal access for the occupant. Each side support bar retains its inherent strength with this separated construction, but it loses the rigid connection across the front of the frame. For some occupants, who push back from the footrests, this loss of rigidity can affect positioning in the chair, and in the light of this requirement we have carried out experimental trials with an adaptation to reconnect the footrest, and regain the front frame rigidity.



This further adaptation to reconnect the footbar mounted footrests uses a separated footbar with footplates attached, and a special toggle connector on the underside to pull and lock the two swingaway footrest sections together in the centre.

In cases where the forces on this assembly are high, the fixing of the footrests to the footbar requires screw fixings all the way through both the plate and the footbar.

A connected swingaway footbar assembly is shown above. The underside toggle connection is not visible above the footrest. It is positioned so that it is out of sight and reach of the occupant.



The connecting and reconnecting operation is lever operated as shown above. After a short time of practice, our trials showed that carers became confident in this operation, and could do it by feel, without bending over to look underneath.

This adaptation is a special individually engineered assembly, and can only be carried out in the Greencare factory.

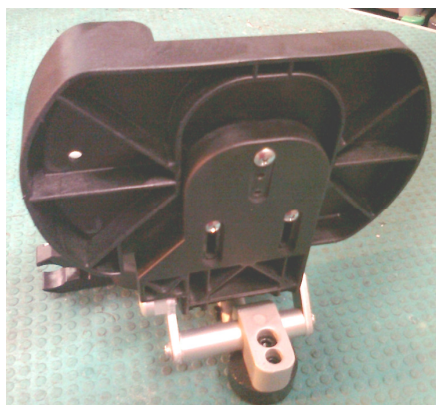
GREENCARE DB1 – FOOTRESTS

Multi Position Footrest.



The picture right shows the footrest located in a forward position. Note that on this the long spacer is mounted forward of the stem centre.

The special multi position Greencare footrest was introduced in 2013. This allows footplate mounting both forwards and rearwards of the footrest stem, and also angled to plantarflex or dorsiflex by 20 degrees from centre. The multi adjustable foot support stem can be fitted into any footrest bracket.



The detail view left has the long spacer mounted rearwards of the footrest stem, to achieve a more rearward position.

The underside view above shows the angle fixing clamp and spacers. Adjustment requires hex keys to release the clamping screws. The spacer positioning effects required front to rear foot location. They can be assembled forwards or rearwards of the centre fixing as required.



A build variation is the reversed support is shown above This has the foot location upstand to the front, where it helps to control forward foot movement.

This footrest allows independent positioning of the occupant foot to achieve a required function and position. The user of this footrest may have complex postural needs, a small change may have a greater effect. Adjustments should only be carried out by technically qualified personnel.

GREENCARE DB1 – FOOTRESTS

Foot and Limb Support Options

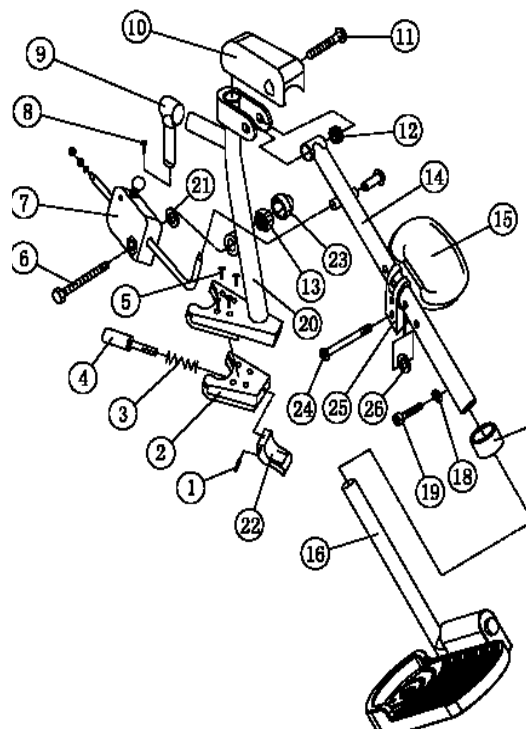
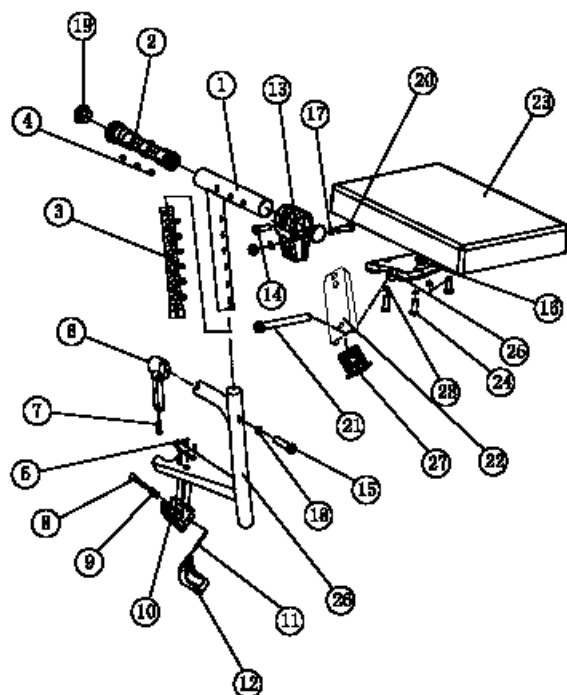
Both the elevating legrest (ELR) and residual limb support are fixed using cling on type bracket assembly. Testing indicates a safe supported max. static load of 30Kg on each support. Actual performance and setting in use will determine if more load capacity is demanded. Specials of increased strength can be manufactured. The elevating leg support shown right has calf pads adjusted individually. When set differently the actual load on each will be different.



An exploded assembly drawing of the elevating legrest is shown below. It can be fitted with or without footplate and stem, depending on user needs. Leg support angle setting is from a generally vertical up to horizontal.

Operation should be demonstrated before handover. Care should be taken in releasing the latch when lowering leg angle, whilst occupant leg is supported.

Moving a wheelchair around with a leg support extended increases required turning space. Manoeuvres need space, and carers present to assist. Impact damage may result is bracket fixings becoming strained. This may be corrected by just retightening screws, but more often component replacement. Is needed.



Residual limb support shown left is to 2013 specification. The stem is height adjustable in the mounting tube by fixing screw position. There are two bracket versions. A second current bracket design is adjustable to lower level for longer limb lengths.

Following user feedback, we are currently reviewing this component duplication to combine functions for 2014 supply to simplify identification, and improve adaptability.

GREENCARE DB1 – FOOTRESTS

Dynamic Footboard

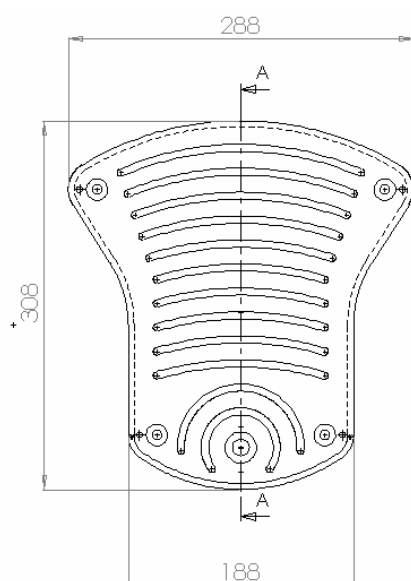
First introduced by Greencare in 2007, this is an alternative to standard type footrests. We first envisaged this as a kitchen area footrest, allowing an independent occupant to get close to, without having to reach over, a forward obstruction. As such it is an improvement to forward stability, see gcqa 039.



This support will accommodate feet to male size 9. It is suspended from existing footrest pivot mounting positions in each side of the wheelchair frame. For side castor wheel clearance, we recommend low front frame outrigging type B castor connectors as shown above.



The polyurethane moulded support is suspended by Bowden cables through swivelling adapters which respond to occupant leg motion, allowing approach to a forward obstacle. Cables are secured by nipping screws in the top pivot which allow foot support angle setting, before finally fixing down. Lower cable fixing points as shown left are at each corner.



Effective height from seat to suit occupant leg length can be set through the initial seat to ground frame build, including cushion. Fine tuning of effective height is then achieved through setting of cable length.

Initial ground clearance recommendation is 75mm providing swinging clearance for most user requirements, but this requires removal for transfers. A build option is to set at 25mm from the ground, where the addition of the occupant weight can cause ground contact, allowing the board to remain on the chair for side transfers.

Movements during use will cause wear around the cable locations. Service replacement cable sets and fixings are available as spares.