

Axles and Receivers

Since the Greencare DB1 modular wheelchair was introduced in 2006, our range of rear wheels has been expanded and tested to meet wider performance criteria of the complete wheelchair range, with occupant weights from 100Kg to 200Kg.

This guidance is updated for 2015, with the mounting of wheels into the rear frame module evolved as a result of practical experience, to meet different factors of occupant size, shape and usage environment, accommodating propulsion technique, weight distribution and all round stability and safety.

There are different sizes of fixed head QD receiver.
Narrow build, 6mm head thickness overall length 55mm.
Basic build, 14mm head thickness overall length 55mm.
Spaced build, 28mm head thickness overall length 69mm.
Attendant hub brake, 6mm head thickness overall length 69mm.
Receivers that fit into the main module have a stepped diameter to ensure a tight fit under high impact loading.
Different lengths of 12mm dia QD spindle are shown right.
Basic attendant build, effective length 94mm.
Basic and Narrow occupant build, effective length 108mm.
An additional 103mm length is anticipated for 2015.
Spaced and hub brake build, effective length 122mm.
QD axle length can be fine adjusted using two spanners.
Length should engage through receiver with 0.2mm clearance.



Receivers and axles are torqued to 12NM. Threadlock may be applied for additional security once position is established. For side stability on wheelchairs where seat width is under 17inches, and when access width permits, wide spaced receivers and low seat to ground height frame are a safety consideration to increase side stability. See gcqa 035 and gcqa 039.

Wheel mounting assembly pictures, shown right, also have a fixed wheel axle. This has a 16mm dia sizing bush inserted into the module receiver hole to allow assembly with a standard 12mm fixed axle. The picture also shows an attendant bracket assembly with a 14mm x 55mm long receiver.

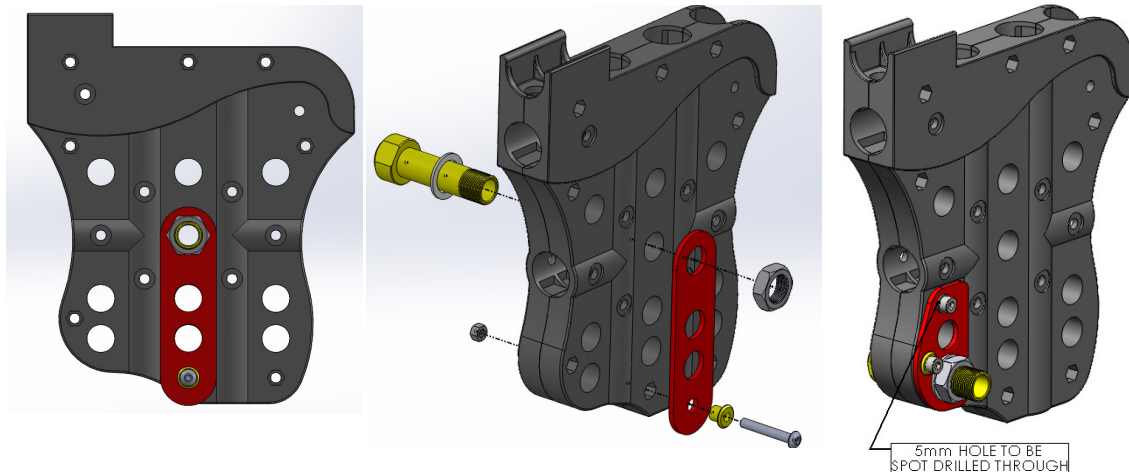


Tight spaces can result in damaging impact with a door frame or wall, evidenced by scuffing to chair, door frame or wall. On occupant propelling chairs width can be reduced by narrow receiver and wheel build with handrim inwards, reducing overall width to be level with wheel hub. Removal of handrims is not recommended because of reduced wheel rigidity, and possibility of impact damage to the hub.

Users should be advised to take care in tight spaces. Where impacts are often unavoidable, the fixed axle wheel option and our damage resistant polyurethane covered handrim are recommended in such cases.

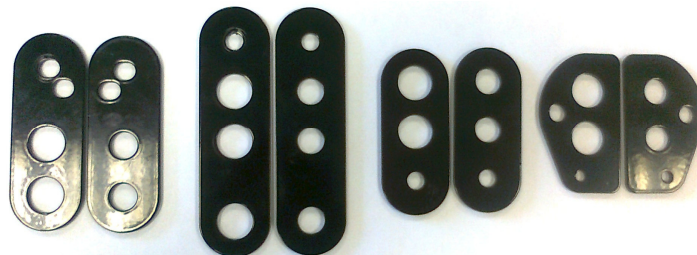
Anti Camber Plates

These flat steel reinforcement plates compensate for natural inward deflection that occurs on wheel and frame assemblies under load. They are fitted to heavy occupant and narrow access builds where occupant weight is 150Kg and above. They are also used in lighter weight applications where occupant movement places heavy impact and turning loads. They are secured by the axle mounting and a separate screw and fixing bush inserted in an appropriate module fixing hole. Fitting is simple, but selection of the correct component is essential



Anti camber plates, shown red in the illustration above for clarity, are fitted on the inside module face, being powder coated black, they are hidden from view. Mark1 module version is a common shape, and can be fitted in the bottom six module mounting holes by turning it around to suit.

Mark2 module versions can be fitted in the bottom six and central mounting hole positions. The forward active stability position, shown right, requires an additional drilled screw hole to positively locate.



Anti camber plates, shown above, are required for different wheel positions. Wheel centre holes for fixed axle are 12mm dia and for QD they are 16mm dia.

Anti Deflection Plates

A formed anti deflection plate, shown right, is fitted as standard to Mark2 module outer face for 200Kg occupant weight rating. This prevents surface indentation under high impact loading. Also eliminating wheel rubbing contact with an outward deflected side panel where an occupant is squeezed in.

The additional 3mm plate thickness increases overall width measured at wheel centre, but reduced deflection measured across the wheels, at the floor contact point, improving overall access width with a very heavy occupant.

