Retractable Wheelchair Tie-downs

Unwin | User Manual

EN Instructions for fitting and use

Thank you for choosing

Retractable tie-downs from Unwin!

The following manual is an important part of the product, providing you with information on how to achieve maximum performance and safe operation. Keep the manual in a safe place so that you can refer to it when necessary.

If you have any questions about your equipment, please contact Unwin.

Once again, thank you for placing your confidence in our products!

Unwin

SAFE VEHICLE ADAPTATION

Safe vehicle adaptation solutions

For your safety Unwin products are designed and tested according to current directives and standards.

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Safety information

Limitation of use

The development of Unwin wheelchair tie-downs is a continuous process. Applications are added on a regular basis. For more detail contact Unwin or look on the Unwin website.

Unwin retractable tie-downs are designed to secure the front and/or rear of a wheelchair when facing forward in a vehicle and must be used as instructed for forward-facing seating. The retractable tie-down is designed to secure wheelchair weights up to 100kg and will require the use of an appropriate occupant restraint for the wheelchair user.

In addition to the details given in these instructions, users of Unwin retractable tie-downs must refer to the wheelchair manufacturer's 'Instructions for Use in Transport' for full details of tie-down attachment points on the wheelchair, plus any other specific instructions relating to use in transport.

Wheelchair users and their carers must make sure that their wheelchair is recommended for use in transport, including any 'add-on' components such as power tilt or recline options.

Quattro tie-downs

General guidance

- Wheelchair Accessories that have not been approved by the Wheelchair Manufacturer must be removed from the wheelchair and secured in the vehicle during transport to reduce the potential for injury. Refer to 'Instructions For Use in Transport' provided with the wheelchair or contact wheelchair manufacturer for further guidance.

- These wheelchair tie-downs comply with all applicable requirements of ISO 10542, including a 48km/h, 20g frontal impact test using a forward facing 85kg surrogate wheelchair and an ATD (test dummy) with a mass of 76.3kg. The test dummy was restrained by both a pelvic and upper-torso restraint. Use of a pelvic only belt may compromise the performance of the WTORS system and should be avoided.

- If the installation is to be used with an occupant head rest anchored to the vehicle, then a vehicle-anchored back rest must be provided to minimise rearward deflection of the wheelchair seatback, preventing neck injury.

- Regular inspection of all parts is recommended and the equipment should be used only if all components are in good condition.

- **Warning:** protect webbing from contacting sharp edges and corners. Replace equipment if the webbing does becomes cut, contaminated or frayed.

- Any restraints which have been subjected to a crash situation from which the vehicle must be towed should, in the interest of safety, be replaced.
- Do not attempt to modify the equipment. For further advice on the installation and use of this tie-down, please contact Unwin. Please read this manual fully before use.
- Avoid contact with corrosive liquids. Care should be taken to prevent contamination of the webbing with polishes, oils and chemicals.
- The tie-down anchorages should be installed by an experienced technician/vehicle converter. Anchorages should not be installed into unsound materials such as corroded metal, wood, plastic and fibre glass panels, without additional and suitable reinforcement.
- The equipment has been tested in a configuration similar to that recommended by Unwin, and any deviation from the recommendations here is the responsibility of the installer/user. These instructions refer use with both Unwin rails and Solo anchors, however the equipment may be used with any Unwin proprietary rail product.

Before installing and using the retractable tie-downs

- Ensure that the wheelchair is correctly maintained and that the settings of any adjustable parts are made according to 'Instructions for Use in Transport'.

- Whenever possible remove any items of luggage etc that may be attached to the wheelchair and secure or store separately during transport in order to reduce the potential for injury to other passengers travelling in the vehicle.

- Extra care must be exercised when using vehicle boarding aids such as passenger lifts or ramps during the loading process. Refer to 'Instructions For Use' for information on safe slopes.

- Position the wheelchair facing forward - centrally in the designated region of the vehicle. **Ensure the wheelchair brakes are applied.**

- To minimise the potential for head injuries in an impact, allow a clear space of at least 400 mm behind and 650 mm, (FCZ, front clear zone), in front of the head of the wheelchair user, (Fig A). The shoulder belt anchorage must be roof or side-wall anchored at a height level such that the belt webbing passes over the midpoint of the occupant shoulder and at a height that is at or just above the level of the occupants shoulders so as not to impose downward loads on the spine.

- A height provision (HHT) ranging from 1000mm to 1550mm should be made, depending on the size of the passenger. There should also be 200 mm of clear space either side of the wheelchair centre line. If these clear space dimensions cannot be provided then any should be adequately padded and comply with impact performance requirements of ECE Regulation 21 'FMVSS 201'. All vehicle padding should comply with the flammability requirements of ECE Regulation 118 'FMVSS 302'.

Note: seated head height (HHT) ranges from as low as 1000mm for a 6-year-old child to 1550mm for a tall adult.

- Wheelchair users, their carers and family are advised to check vehicle specifications to ensure that sufficient floor space is available to accommodate the wheelchair and tie-down system. These distances are based upon the desire to maintain clear zones for potential head excursions of occupants provided with both upper and lower torso restraints.

- Users of heavy powered wheelchairs are also advised to check vehicle carrying capacity. If in doubt consult the vehicle supplier for further details.

- Any airbag, as fitted to the vehicle, shall be used only as a supplementary occupant restraint if designed to be used in combination with the Solar Quattro and an appropriate occupant restraint.

- Installers of this tie-down should take note of any vehicle airbag position when planning the installation. Airbags can cause serious injury if a wheelchair-seated occupant is seated too close to an airbag position. If in doubt contact the vehicle manufacturer or your National Automotive Regulatory Body for advice.

Figure A

Fit and use

Fitting and using the Quattro as a front tie-down

Rail floor

1. When using Quattro tie-down with hooks or karabiners, ensure the karabiner / hook gates are facing outwards, (Fig 2A).

2. Install the front Quattro's into the rail by aligning the Quattro ATF (aluminium track fitting) feet with the cut-out sections of the rail and locate into the rail, (Fig 3).

3. Press on the ribbed part of the ATF, (Fig 3A), and push firmly towards the wheelchair until the yellow plunger drops and locks into the rail. Install the second Quattro in the same way. Ensure they are opposite each other.

4. Press the yellow button(s), (Fig 2B), to release the webbing and extend and attach each of the karabiners, hooks or tongue and buckle arrangements to the wheelchair frame creating an angle of around 40 to 60°, (Fig 1). (Some wheelchairs will indicate these tie-down positions, Fig 4).

5. Press the yellow button(s) again to remove the webbing slack.

6. Ensure that each front Quattro webbing is approximately the same length.

Removing the Quattro

1. Release the tension in the front tie-downs by pressing the yellow button and extending the webbing to allow the karabiner, hook or tongue and buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro.

2. Remove each Quattro ATF from the rail by simultaneously lifting the yellow plunger and sliding the fitting back until the ATF feet align with the cut outs in the rail.

3. Lift the Quattro clear of the rail and store safely.

Figure 3

Figure 2

Figure 1

Figure 4

Fit and use

Fitting and using the Quattro as a front tie-down

Solo anchor

1. When using Quattro tie-down with hooks or karabiners, ensure the karabiner / hook gates are facing outwards.

2. Attach the front Quattros onto the front Solo anchor points by aligning the raised protrusion on the cleat with the indent on the floor anchors, (Fig 6). ***Note: protrusion and indent are only applicable with spring loaded anchors, not with static anchors S10.***

3. Slide the cleat fully home, (Fig 7), rotate the assembly through 90° to allow the karabiners, hooks or tongue and buckle arrangement to be attached to the wheelchair frame.

4. Press the yellow button(s), (Fig 5A), to release the webbing and extend and attach each of the karabiners, hooks or tongue and buckle arrangements to the wheelchair frame, creating an angle of around 40 to 60°, (Fig 1). (Some wheelchairs will indicate these tie-down positions, Fig 4).

5. Press the yellow button(s) again to remove the webbing slack.

6. Ensure that each front Quattro webbing is approximately the same length.

Removing the Quattro

1. Release the tension in the front tie-downs by pressing the yellow button and extending the webbing to allow the karabiner, hook or tongue and buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro.

2. Remove each Quattro Solo from the anchor by rotating the tie-down through 90° so that the raised protusion on the cleat is aligned with the indent on the floor anchors, (Fig 6). Slide off.

3. Pull the tie-down away from the floor anchor and store safely.

Figure 1

Figure 4

Figure 5

Figure 6

Figure 7

Fit and use

Fitting and using the Quattro as a front tie-down

Bolted

1. The Quattro tie-downs will have been fitted in accordance with vehicle converter's instructions.

2. Press the yellow button(s), (Fig 8A), to release the webbing and extend and attach each of the hooks to the wheelchair frame, creating an angle of around 40 to 60°, (Fig 1). (Some wheelchairs will indicate these tie-down positions, Fig 4).

3. Press the yellow button(s) again to remove the webbing slack.

4. Ensure that each front Quattro webbing is approximately the same length.

Removing the Quattro

1. Release the tension in the front tie-downs by pressing the yellow button and extending the webbing to allow the karabiner, hook or tongue and buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro.

Figure 4

Figure 1

Figure 8

Fit and use

Fitting and using the Quattro as a rear tie-down

Rail floor

1. When using Quattro tie-down with hooks or karabiners, ensure the karabiner / hook gates are facing outwards, (Fig 10A), in the same way as the fronts.

2. Install the Quattro restraints into the rail, in the same way as the fronts. Ensure that they are opposite each other.

3. Press the yellow Quattro release button(s) to extend the webbing and attach the karabiner, hook or tongue and buckle arrangements around the wheelchair main frame (Fig 10B). (Some wheelchairs will indicate this rear frame tie-down position, Fig 4).

4. Press each Quattro release button once again to take up the sack in the webbing and create an angle of around 30 to 45° and within the rear view zone (Fig 9).

5. Final tensioning is achieved by turning each tensioning handle until the webbing is equally taut on each side (Fig 10C).

Removing the Quattro

1. Release the tension in the rears by pressing the yellow button and extending the webbing to allow the karabiner, hook or tongue and buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro.

2. Remove each Quattro ATF from the rail by simultaneously lifting the yellow plunger and sliding the fitting back until the ATF feet align with the cut outs in the rail.

3. Lift the Quattro clear of the rail and store safely.

Figure 4

Figure 10

Dimensions in millimeters

NOTE—Note that angles indicated are obtained by projecting the angle of each tiedown strap onto a vertical plane parallel to the wheelchair reference plane (side view) or onto a vertical plane that is perpendicular to the wheelchair reference plane (rear view).

Figure 9

Fit and use

Fitting and using the Quattro as a rear tie-down

Solo anchor

1. When using Quattro tie-down with hooks or karabiners, ensure the karabiner / hook gates are facing outwards, in the same way as the fronts.

2. Install the Quattro restraints onto the solo anchors, in the same way as the fronts.

3. Press the yellow Quattro release button(s) to extend the webbing and attach the karabiner, hook or tongue and buckle arrangements around the wheelchair main frame, (Fig 11A). (Some wheelchairs will indicate this rear frame tie-down position, Fig 4).

4. Press each Quattro release button once again to take up the sack in the webbing and create an angle of around 30 to 45° and within the rear view zone, (Fig 9).

5. Final tensioning is achieved by turning each tensioning handle until the webbing is equally taut on each side, (Fig 11B).

Removing the Quattro

1. Release the tension in the rears by pressing the yellow button and extending the webbing to allow the karabiner, hook or tongue and buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro.

2. Remove each Quattro Solo from the anchor by rotating the tie-down through 90° so that the raised protusion on the cleat is aligned with the indent on the floor anchors, (Fig 6). Slide off.

3. Pull the tie-down away from the floor anchor and store safely.

NOTE—Note that angles indicated are obtained by projecting the angle of each tiedown strap onto a vertical plane parallel to the wheelchair reference plane (side view) or onto a vertical plane that is perpendicular to the wheelchair reference plane (rear view).

Figure 9

Figure 6

Figure 4

Figure 11

Fit and use

Fitting and using the Quattro as a rear tie-down

Bolted

1. The Quattro tie-downs will have been fitted in accordance with vehicle converter's instructions.

2. Press the yellow Quattro release button(s) to extend the webbing and attach the each of the hooks around the wheelchair main frame (Fig 12A). (Some wheelchairs will indicate this rear frame tie-down position, Fig 4).

3. Press each Quattro release button once again to take up the sack in the webbing and create an angle of around 30 to 45° and within the rear view zone (Fig 9).

4. Final tensioning is achieved by turning each tensioning handle until the webbing is equally taut on each side (Fig 12B).

Removing the Quattro

1. Release the tension in the front tie-downs by pressing the yellow button and extending the webbing to allow the karabiner, hook or tongue and buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro.

Figure 4

Dimensions in millimeters

NOTE—Note that angles indicated are obtained by projecting the angle of each tiedown strap onto a vertical plane parallel to the wheelchair reference plane (side view) or onto a vertical plane that is perpendicular to the wheelchair reference plane (rear view).

Figure 9

Figure 12

Fit and use

Fitting and using the Quattro Express as a front tie-down

Rail / Solo anchor / Bolted

1. Follow the instructions for front Quattro tie-downs, set out earlier in this manual, to secure the front Quattro Express tie-downs to the floor anchorage.

2. Extend the webbing and attach each of the karabiners, hooks or tongue & buckle arrangements to the wheelchair front frame, creating an angle of around 40 to 60°, (Fig 1). (Some wheelchairs will indicate these tie-down positions, Fig 4).

   Note: It is not necessary to press yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig 14), is NOT visible. The yellow button must be pressed if extending webbing with the label in view.

3. The webbing will retract automatically into the reel. **IMPORTANT: The yellow locking label must be fully visible, to ensure that the reel is locked off, (Fig 14).**

4. Ensure that each front Quattro Express webbing is approximately of the same length.

Removing the Quattro Express

1. Release the tension in the front tie-downs by pressing the yellow button, (Fig 13A), and extending the webbing to allow the karabiner, hook or tongue & buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro Express.

2. Continue to follow the instructions for front Quattro tie-downs, set out earlier in this manual, to remove front Quattro Express tie-downs from the floor anchorage.

Figure 1

Figure 14

Figure 4

Figure 13

Fit and use

Fitting and using the Quattro Express as a rear tie-down

Rail / Solo anchor / Bolted

1. Follow the instructions for rear Quattro tie-downs, set out earlier in this manual, to secure the rear Quattro Express tie-downs to the floor anchorage.

2. Extend the webbing and attach each of the karabiners, hooks or tongue & buckle arrangements around the rear vertical wheelchair frame. (Some wheelchairs will indicate these tie-down positions, Fig 4).

   Note: It is not necessary to press yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig 14), is NOT visible. The yellow button must be pressed if extending webbing with the label in view.

3. Slack in the webbing with be taken in automatically by the reel to create an angle of around 30 to 45° and within the rear view zone, (Fig 9).

4. Final tensioning is achieved by turning each tensioning handle until the webbing is equally taut on each side. The webbing with retract automatically into the reel. **IMPORTANT: The yellow locking label must be fully visible, to ensure that the reel is locked off, (Fig 14).**

5. Ensure that each rear Quattro Express webbing is approximately of the same length.

Removing the Quattro Express

1. Release the tension in the rear tie-downs by pressing the yellow button, (Fig 13A), and extending the webbing to allow the karabiner, hook or tongue & buckle arrangements to be removed from the wheelchair frame. If the webbing is particularly tight, it may be necessary to slightly 'tension' the webbing with the hand wheel, whilst pressing the yellow button, to remove the webbing lock on the Quattro Express.

2. Continue to follow the instructions for rear Quattro tie-downs, set out earlier in this manual, to remove rear Quattro Express tie-downs from the floor.

Dimensions in millimeters

NOTE—Note that angles indicated are obtained by projecting the angle of each tiedown strap onto a vertical plane parallel to the wheelchair reference plane (side view) or onto a vertical plane that is perpendicular to the wheelchair reference plane (rear view).

Figure 9

Figure 14

Figure 4

Figure 13

After care

Equipment storage and maintenance

- Store the restraint safely off the floor to avoid damage and ensure that it cannot become a projectile in an accident. This can be achieved by using wall mounted storage bag such as SLR111.
- Regularly inspect the wheelchair tie-downs for damage, wear or malfunction. If any problems are identified replace it immediately.
- When not in use, keep loose occupant webbing ends connected to their corresponding buckle sleeves, etc, to prevent them from becoming tripping hazards and from flailing around when the vehicle is in motion.
- All webbing and components can be cleaned as necessary, but care should be taken to prevent contamination of the webbings with polishes, oils and chemicals, particularly battery acide.
- To clean the straps use warm soapy water and a clean soft cloth. Rinse with clear water and allow to air dry. To disinfect, use a mild spray disinfectant and do not use products containing bleach. **Important: when cleaning or disinfecting, do not immerse or flood buckles, karabiners or Solo fittings in the disinfectant or water.**
- If the vehicle is involved in an accident when any restraints are deployed, remove them from service and replace immediately. If in doubt please contact Unwin.

Warranty

Unwin products are extensively tested using Unwin anchorage systems, and our full warranty normally only applies to Unwin equipment when used with Unwin branded anchorages or as instructed. Unwin have also participated in test programs with other manufacturers anchorage products and will support warranty on the Unwin products when used in conjunction with such jointly tested systems. For further details on specific applications please contact the Sales Office. In other situations, using Unwin products, for which Unwin has not participated in a joint test program, a limited Unwin warranty will apply.

Declaration of conformity

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Declares that the product /

Quattro tie-downs
RQPT, RQPH, RQPK, RQMT, RQMH, RQMK, SQPT, SQPH, SPQK, SQMT, SQMH, SQMK, BQPT, BQPH, BQPK, BQMT, BQMH and BQMK, FR02, FR04, FRS01, FRS04

Quattro Express tie-downs
RQEPT, RQEPH, RQEPK, RQEMT, RQEMH, RQEMK, SQEPH, SQEPK, SQEPT, SQEMH, SQEMK, BQEPT, BQEPH, BQEPK, BQEMT, BQEMH and BQEMK.

Conforms to following directives standards and regulations /

214/2014/EU Paragraphs 2.3.1 and 2.3.2
ISO 10542:2012
RESNA WC-4 2012 Section 18
R.107.06
2007/46/EC

Unwin, Martock, 10 August 2017

Chris Hellier
MD

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Quality system certified in accordance with ISO 9001:2008

Illustrations, descriptions and specifications in the user manual are based on current product information.
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Worldwide Safe Mobility Solutions

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