



TOR HD QUATTRO EXPRESS WHEELCHAIR TIE-DOWN

User Manual

Applicable to products:

RQE16MK, SQE16MK, T-RQE16MK, T-SQE16MK, BQE16MK

UI12347

EN Instructions for fitting and use

Thank you for choosing

TOR HD Quattro Express Wheelchair Tie-down from BraunAbility!

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 you can refer to it when necessary.

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

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



Safe vehicle adaptation solutions

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

Safety information

- 4 Limitation of use
- 6 General guidance
- 8 Before installing and using the wheelchair restraint kits

Fit and use

- 10 Fitting and using retractor as front tie-down - Rail
- 12 Fitting and using retractor as rear tie-down - Rail
- 14 Fitting and using retractor as front tie-down - Solo
- 16 Fitting and using retractor as rear tie-down - Solo
- 18 Fitting and using retractor as front tie-down - Bolted
- 20 Fitting and using retractor as rear tie-down - Bolted

After care

- 22 Equipment storage and maintenance
- 23 Warranty

"Declaration of conformity" at the end of the manual.

Safety information

Limitation of use

The development of BraunAbility kits is a continuous process. Applications are added on a regular basis. For more details contact BraunAbility or look on the BraunAbility website.



*These BraunAbility wheelchair tie-down kits are designed to secure a wheelchair when facing **forward** in a vehicle and must be used as instructed. The retractable tie-downs are designed to secure wheelchair weights up to 160kg. The use of an appropriate occupant restraint will be required for all.*



In addition to the details given in these instructions, users of BraunAbility wheelchair tie-down kits 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 caregivers must make sure that their wheelchair is recommended for use in transport, including any 'add-on' components such as power tilt or recline options.

SQE16MK



T-SQE16MK



RQE16MK



T-RQE16MK



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 surrogate 85kg 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 wheelchair tie-down and occupant restraint system (WTORS) and should be avoided.
- If the installation is to be used with an occupant headrest 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 becomes cut, frayed, or contaminated with polishes, oils or chemicals, particularly battery acid.

- 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 wheelchair tie-down, please contact BraunAbility. 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 wheelchair 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 fiber glass panels, without additional and suitable reinforcement.
- The equipment has been tested in a configuration recommended by BraunAbility and any deviation from the recommendations here is the responsibility of the installer/user.
- The rail and Solo floor anchors will have been installed in the vehicle in accordance with their own and the vehicle converter's instruction. Position the wheelchair within the vehicle as required.

Before installing and using the TOR HD Quattro Express wheelchair tie-down

- 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 traveling in the vehicle.
- Position the wheelchair facing forward - centrally in the designated region of the vehicle.
Ensure the wheelchair brakes are applied.
- To minimize the potential for head injuries in an impact, allow a clear space of at least 450mm (18in) behind and 650mm (26in), (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 (39in) to 1550mm (61in) should be made, depending on the size of the passenger. There should also be 200mm (8in) of clear space either side of the wheelchair center line. If these clear space dimensions cannot be provided then any structure protruding into this area 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 (39in) for a 6-year-old child to 1550mm (61in) for a tall adult.

- Wheelchair users, their caregivers 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 WTORS.
- 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.
- When using the heavy duty tie-downs with an integrated occupant belt(s) the maximum wheelchair weight is 130kg unless you use a separate occupant belt.

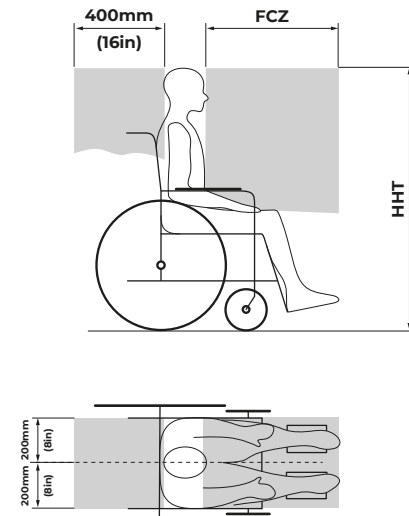


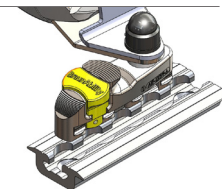
Figure A

Fit and use

TOR HD Quattro Express

Rail floor - front wheelchair tie-down

1. When using TOR heavy duty Quattro Express tie-down with karabiners, ensure the karabiner gates are facing outwards, (Fig 1A).
2. Install the front retractor into the rail by aligning the ATF (aluminium track fitting) feet with the cut-out sections of the rail. Press down on the ribbed part of the ATF, (Fig 2A), and push firmly towards the wheelchair until the yellow plunger drops and locks into the rail.
3. Extend the webbing and attach the karabiner fixing (Fig. 1A) around the wheelchair's securement point with the gate facing outboard, (Fig. 6). Some wheelchairs will indicate these tie-down positions, (Fig 5).
Note: It is not necessary to press the yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig. 3), is NOT visible. The yellow button must be pressed if extending webbing with the label in view, (Fig. 1B).
4. Install the second front retractor ATF in the same way, ensuring that each fitting is opposite each other, if using rail lengths which have adjustability in ATF positioning. **IMPORTANT: Check that the clips are fully engaged on both sides.**
5. Ensure that each front Quattro Express webbing is of approximately the same length and that an angle of around 40° to 60° has been created, within the front view zone, (Fig. 4). Slack in the webbing will automatically be taken up by the reel. Apply brakes to the wheelchair.



Removing the TOR HD Quattro Express wheelchair tie-down

IMPORTANT: First remove occupant restraint, as instructed in the relevant manual.

1. Release the tension in the front tie-downs by pressing the yellow button, (Fig. 1B), and extending the webbing to allow the karabiner 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, (Fig. 1C), whilst pressing the yellow button, to remove the webbing lock on the retractor.
2. Lift the ATF yellow plunger fully and slide back to align the ATF feet with the rail cut outs. Lift away from the rail. Repeat operation with the other side and store safely.

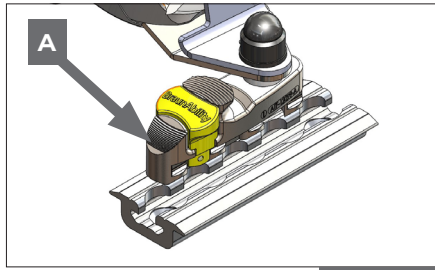


Figure 2



Figure 3

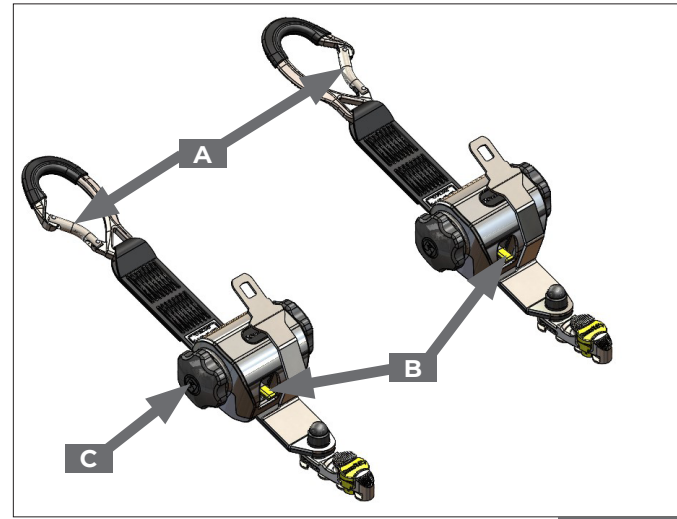


Figure 1

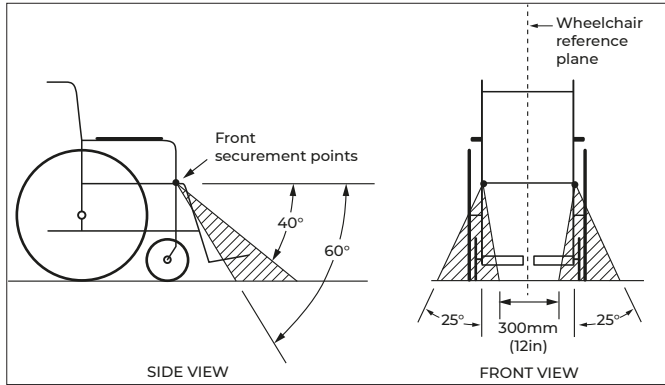


Figure 4



Figure 5

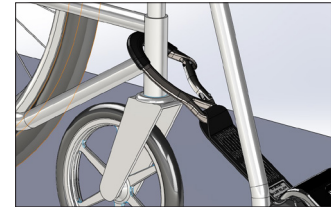


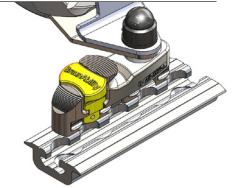
Figure 6

Fit and use

TOR HD Quattro Express

Rail floor - rear wheelchair tie-down

1. Install each rear retractor with the karabiners facing outboard, (Fig. 1A). Align the ATF feet with the cut out sections of the rail. Press down on the ribbed part of the ATF, (Fig. 1A), and push firmly until the yellow plunger drops and locks into the rail. Install the second tie-down, ensuring that each fitting is opposite each other. **IMPORTANT:** Check that the clips are fully engaged on both sides.
2. Extend the webbing and attach the karabiners around the wheelchair's securement points with the karabiner gates facing outwards, (Fig. 8). Some wheelchairs will indicate the securement points, (Fig. 9). **Note:** It is not necessary to press the yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig. 3), is NOT visible. The yellow button must be pressed if extending webbing with the label in view, (Fig. 1B).
3. Slack in the webbing will be taken in automatically by the reel to create an angle of around 30° to 45° and within the rear view zone, (Fig. 7).
4. Final tensioning is achieved by turning each tensioning handle, (Fig. 1C), until the webbing is equally taut on each side. **IMPORTANT:** the yellow label must be visible, (Fig. 3), to ensure that the reel is locked off.
5. Ensure that each rear Quattro Express webbing is approximately of the same length.



Removing the TOR HD Quattro Express wheelchair tie-down

IMPORTANT: First remove occupant restraint, as instructed in the relevant manual.

1. Release the tension in the rear tie-downs by pressing the yellow button, (Fig. 1B), and extending the webbing to allow the karabiner 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, (Fig. 1C), while pressing the yellow button, to remove the webbing lock on the retractor.
2. Lift the ATF yellow plunger fully and slide back to align the ATF feet with the rail cut-outs. Lift away from the rail. Repeat operation with the other side and store safely.

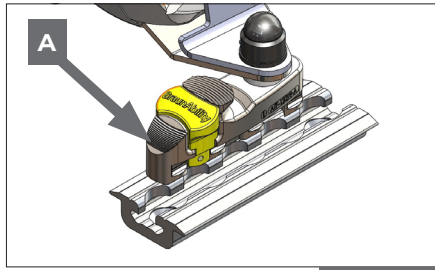


Figure 2



Figure 3

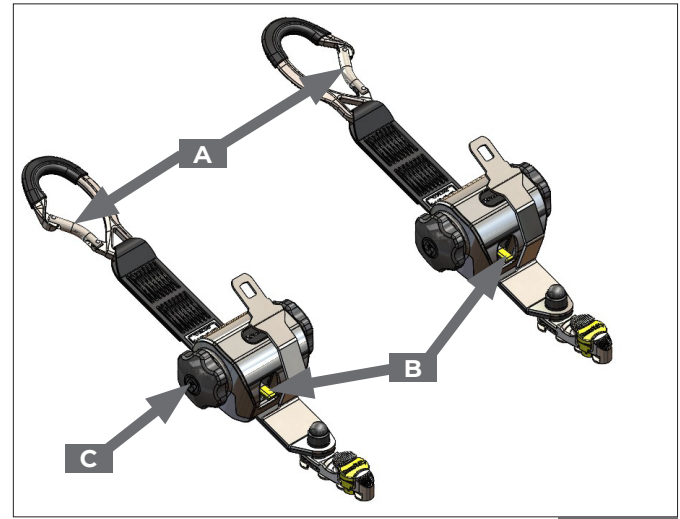
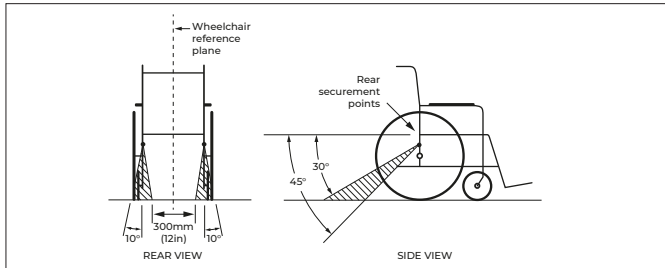


Figure 1



NOTE Note that angles indicated are obtained by projecting the angle of each tie-down 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 7

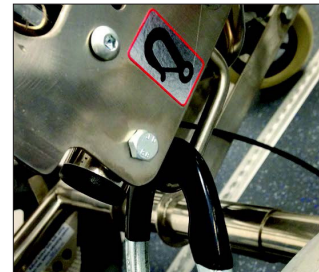


Figure 9

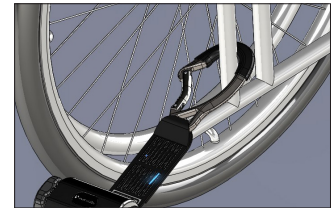


Figure 8

Fit and use

TOR HD Quattro Express

Solo floor anchor - front wheelchair tie-down

1. When using TOR heavy duty Quattro Express tie-downs with karabiners, ensure that the karabiner gates face outwards, (Fig. 10A)
2. Install each front retractor cleat onto a front Solo anchor by aligning the open mouth of the cleat and the protrusion, (Fig. 11C), to the slot on the floor anchor. Slide the cleat fully home, (allowing the keyway within the cleat to guide into its home position, Fig. 11A & B), and rotate the cleat through 90° to align the retractor with the wheelchair frame, (Fig. 12).
3. Extend the webbing and attach the karabiner around the wheelchair's securement point with the open gate facing outboard, (Fig. 6). Some wheelchairs will indicate the securement points, (Fig. 5).
Note: It is not necessary to press the yellow button, (Fig. 10B). Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig. 3), is NOT visible. The yellow button must be pressed if extending webbing with the label in view.
4. Ensure that each rear Quattro Express webbing is approximately of the same length and that an angle of around 40° to 60° has been created, within the front view zone, (Fig. 4).
5. Slack in the webbing will be taken in automatically by the reel. Apply the brakes to wheelchair.



Removing the TOR HD Quattro Express wheelchair tie-down

IMPORTANT: First remove occupant restraint, as instructed in the relevant manual.

1. Release the tension in the front tie-downs by pressing the yellow button, (Fig 10B), and extending the webbing to allow the karabiner, (Fig. 10A), fixing 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, (Fig. 10C), while pressing the yellow button, (Fig. 10B), to remove the webbing lock on the retractor.
2. Remove each front retractor from the anchor by rotating the tie-down through 90° so that the raised protrusion, (Fig. 11C), on the cleat is facing its parallel cleat.
3. Pull the tie-down away from the floor anchor and store safely.

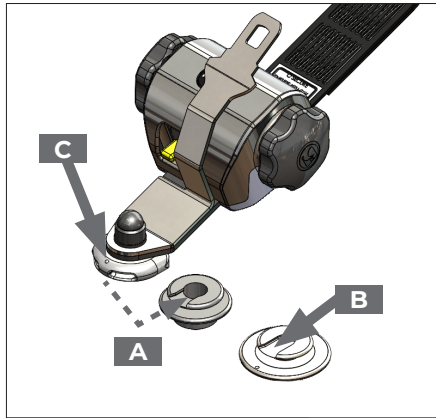


Figure 11

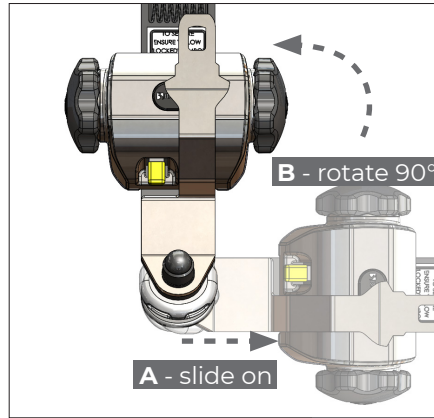


Figure 12

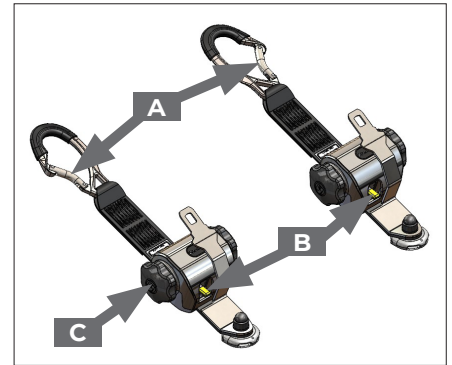


Figure 10



Figure 3

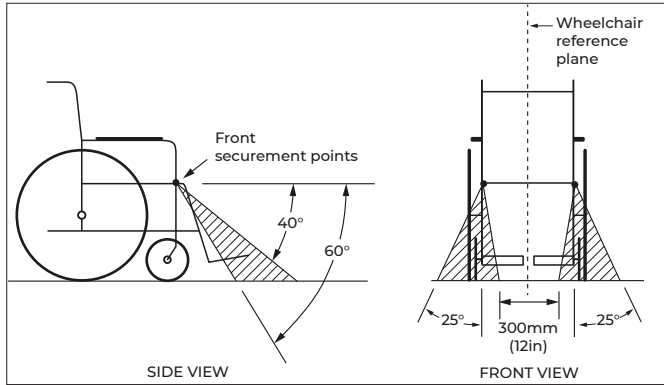


Figure 4



Figure 5

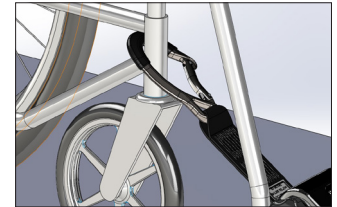


Figure 6

Fit and use

TOR HD Quattro Express

Solo floor anchor - rear wheelchair tie-down

1. When placing the TOR heavy duty Quattro Express tie-down with karabiners behind the wheelchair, ensure that the karabiner gates are facing outwards, (Fig. 10A)
2. Install the restraint(s) onto the floor anchor(s) by aligning the open mouth of the cleat and the protrusion, (Fig. 11C), to the slot on the floor anchor, (Fig. 11A & B).
3. Slide the cleat fully home (allowing the keyway within the cleat to guide into its home position), rotate the assemblies through 90° to allow the karabiners to be attached to the wheelchair frame, (Fig. 12A & B).
4. Extend the webbing and attach the karabiner fixing around the wheelchair's securement points with the open gate facing outboard, (Fig. 10A). **Note:** It is not necessary to press the yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig. 3), is NOT visible. The yellow button must be pressed if extending webbing with the label in view, (Fig. 10B). Some wheelchairs will indicate the securement points, (Fig. 9).
5. Slack in the webbing will be taken in automatically by the reel to create an angle of around 30° to 45° and within the rear view zone, (Fig. 7).
6. Final tensioning is achieved by turning each tensioning handle, (Fig. 10B), until the webbing is equally taut on each side. The webbing will retract automatically into the reel. **IMPORTANT: the yellow label must be visible, to ensure that the reel is locked off, (Fig. 3).**
7. Ensure that each rear Quattro Express webbing is approximately of the same length.

Removing the TOR HD Quattro Express wheelchair tie-down

IMPORTANT: First remove the occupant restraint, as instructed in the relevant manual.

1. Release the tension in the rear tie-downs by pressing the yellow button, (Fig. 10B), and extending the webbing to allow the karabiner 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, (Fig. 10C), while pressing the yellow button, to remove the webbing lock on the retractor.
2. Remove each Quattro Solo from the anchor by rotating the tie-down through 90° so that the raised protrusion, (Fig. 11C), on the cleat is aligned with the indent on the floor anchors, (Fig. 11A & B). Slide off.
3. Pull the tie-down away from the floor anchor and store safely.



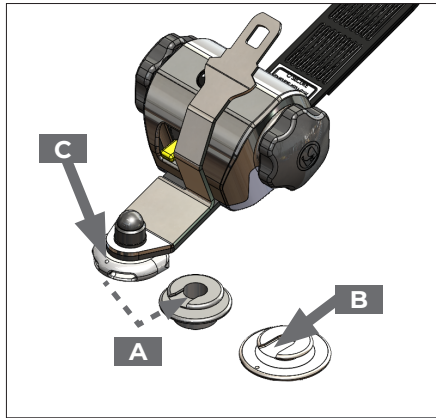


Figure 11

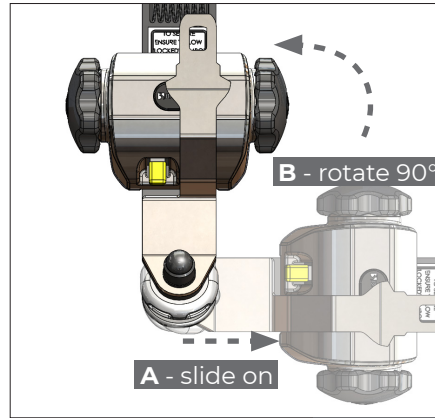


Figure 12

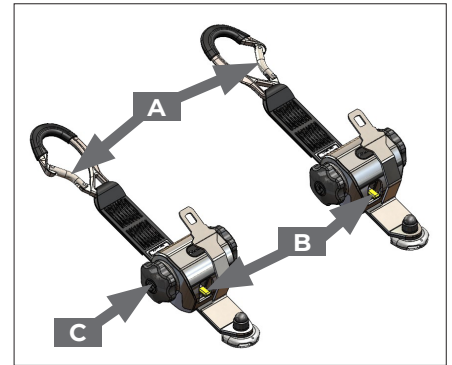


Figure 10



Figure 3

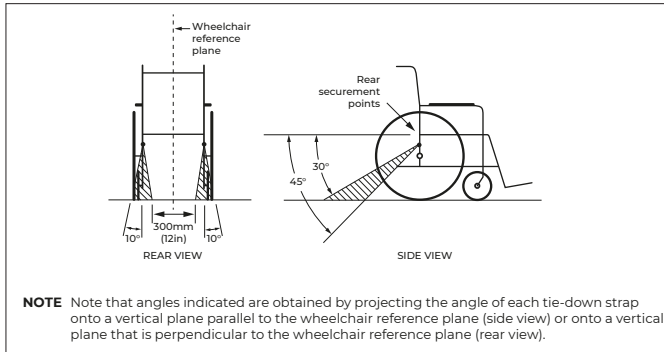


Figure 7



Figure 9

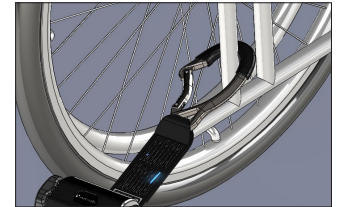


Figure 8

Fit and use

TOR HD Quattro Express

Bolted - front wheelchair tie-down

1. Bolted wheelchair tie-downs will have been installed in the vehicle in accordance with our own and the vehicle converter's instruction. **Note:** if fitting hardware, other than that provided in this kit, is to be used with the equivalent fixing bolts (cross sectional and an equivalent grade), namely B.S. Grade 'S' (ISO 8.8). **Items torqued to 40Nm.**
2. Extend the webbing and attach the karabiner fixing around the wheelchair's securement points with the open gate facing outboard, (Fig. 13A). **Note:** It is not necessary to press the yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig. 3), is NOT visible. The yellow button must be pressed if extending webbing with the label in view, (Fig. 13B). Some wheelchairs will indicate the securement points, (Fig. 5).
3. Slack in the webbing will be taken in automatically by the reel to create an angle of around 30° to 45° and within the rear view zone, (Fig. 7).
4. Final tensioning is achieved by turning each tensioning handle, (Fig. 13B), until the webbing is equally taut on each side. The webbing will retract automatically into the reel. **IMPORTANT: the yellow label must be visible, to ensure that the reel is locked off, (Fig. 3).**
5. Ensure that each rear Quattro Express webbing is approximately of the same length.



Removing the TOR HD Quattro Express wheelchair tie-down

IMPORTANT: First remove the occupant restraint, as instructed in the relevant manual.

1. Release the tension in the rear tie-downs by pressing the yellow button, (Fig. 13B), and extending the webbing to allow the karabiner 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, (Fig. 13C), while pressing the yellow button, to remove the webbing lock on the retractor.

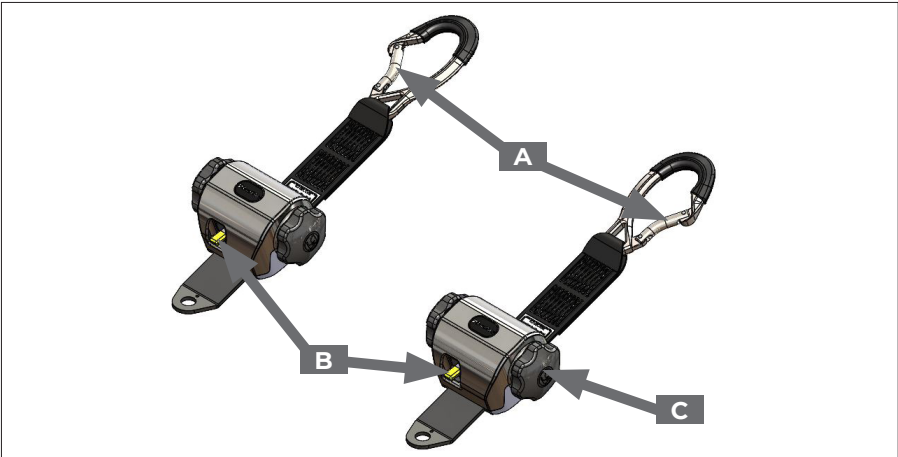


Figure 13



Figure 3

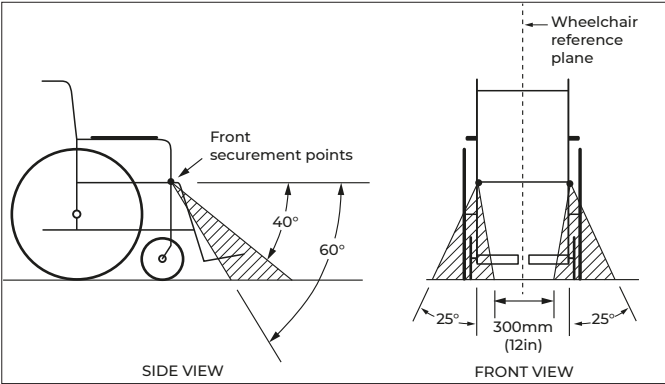


Figure 4



Figure 5

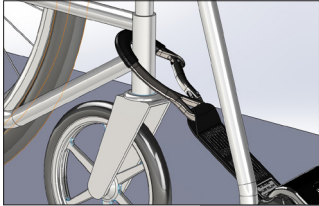


Figure 6

Fit and use

TOR HD Quattro Express

Bolted - rear wheelchair tie-down

1. Bolted wheelchair tie-downs will have been installed in the vehicle in accordance with our own and the vehicle converter's instruction. **Note:** if fitting hardware, other than that provided in this kit, is to be used with the equivalent fixing bolts (cross sectional and an equivalent grade), namely B.S. Grade 'S' (ISO 8.8). **Items torqued to 40Nm.**
2. Extend the webbing and attach the karabiner fixing around the wheelchair's securement points with the open gate facing outboard, (Fig. 13A). **Note:** It is not necessary to press the yellow button. Webbing can be extended from the reel without pressing the yellow button if the lock label, (Fig. 3), is NOT visible. The yellow button must be pressed if extending webbing with the label in view, (Fig. 13B). Some wheelchairs will indicate the securement points, (Fig. 9).
3. Slack in the webbing will be taken in automatically by the reel to create an angle of around 30° to 45° and within the rear view zone, (Fig. 7).
4. Final tensioning is achieved by turning each tensioning handle, (Fig. 13B), until the webbing is equally taut on each side. The webbing will retract automatically into the reel. **IMPORTANT: the yellow label must be visible, to ensure that the reel is locked off, (Fig. 3).**
5. Ensure that each rear Quattro Express webbing is approximately of the same length.



Removing the TOR HD Quattro Express wheelchair tie-down

IMPORTANT: First remove the occupant restraint, as instructed in the relevant manual.

1. Release the tension in the rear tie-downs by pressing the yellow button, (Fig. 13B), and extending the webbing to allow the karabiner 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, (Fig. 13C), while pressing the yellow button, to remove the webbing lock on the retractor.

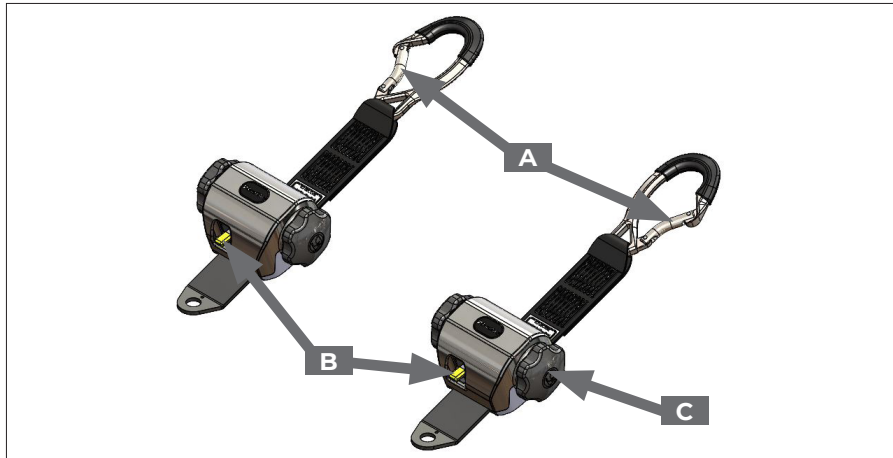


Figure 13



Figure 3

Fit and use

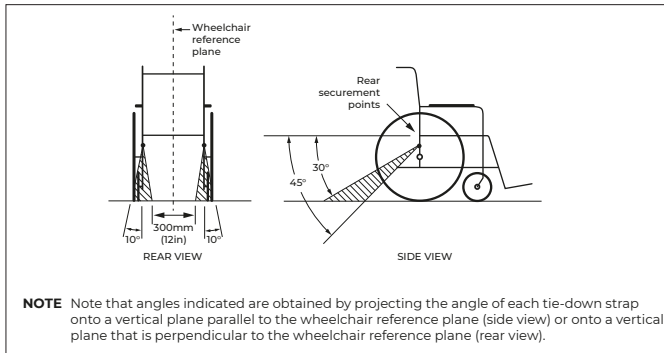


Figure 7

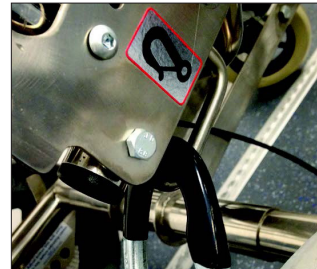


Figure 9

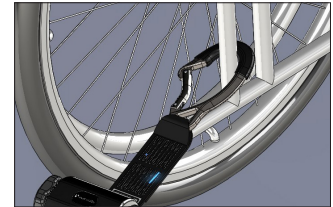


Figure 8

After care

Equipment storage and maintenance

- Store the restraint safely in supplied bag, off the floor, to avoid damage and ensure that it cannot become a projectile in an accident.
- Regularly inspect the wheelchair restraint systems for damage, wear or malfunction. If any problems are identified replace components immediately.
- When not in use, keep loose occupant webbing ends connected to their corresponding buckle sleeves, etc, to prevent them from becoming trip 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 acid.
- 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, karabiner fittings or floor anchors 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 BraunAbility.

Warranty

BraunAbility products are extensively tested using BraunAbility anchorage systems, and our full warranty normally only applies to BraunAbility equipment when used with BraunAbility branded anchorages or as instructed. BraunAbility have also participated in test programs with other manufacturers anchorage products and will support warranty on the BraunAbility 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 BraunAbility products, for which BraunAbility has not participated in a joint test program, a limited BraunAbility warranty will apply.

Declaration of conformity

Manufacturer /

BraunAbility UK Ltd
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Martock, Somerset, TA12 6EY,
UK

Phone: +44 1935 827740
Email: info@braunability.eu
www.braunability.eu

Declares that the products /

RQE16MK, SQE16MK, T-RQE16MK,
T-SQE16MK, BQE16MK

Conforms to applicable paragraphs in the following Directives, Standards and Regulations /

214/2013/ EU Paragraphs 2.3.1 and 2.3.2
ISO 10542:2012
RESNA WC-4 2012 Section 18
R.107.06
2018-858-EU
DIN 75078

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Accredited by URS as testing laboratory in accordance with ISO/IEC 17025:2005
Quality system certified in accordance with ISO 9001:2008

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