Front tie-downs

User manual

EN Instructions for fitting and use

Thank you for choosing a

Front tie-downs 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 that 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.

EN

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Product certificate at the end of the manual.

Safety information

Limitation of use

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

These BraunAbility front tie-downs are designed to secure the front of a wheelchair when facing forward in a vehicle and must be used as instructed. The front tie-downs are designed to secure wheelchair weights up to 100kg when used in conjonction with an appropriate rear wheelchair tie-down. Titan 1 front tie-down, when used in conjonction with Titan 1 rear tie-down can secure wheelchair weights of up 200kg. The use of a rear tie-down and occupant restraint will be required for all.

In addition to the details given in these instructions, users of BraunAbility wheelchair & occupant restraint 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 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.

Front tie-downs

OFO8

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SFT

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 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 these tie-downs 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 restraint 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 BraunAbility and any deviation from the recommendations here is the responsibility of the installer/user. These instructions refer to use with both our rails and Solo anchors, however the equipment may be used with any BraunAbility proprietary rail product.

Before installing and using the front 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 400mm behind and 650mm, (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 200mm of clear space either side of the wheelchair centre line. If these clear space dimensions cannot be provided then any structure protruding into this space 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 wheelchair tie-down.
- 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.

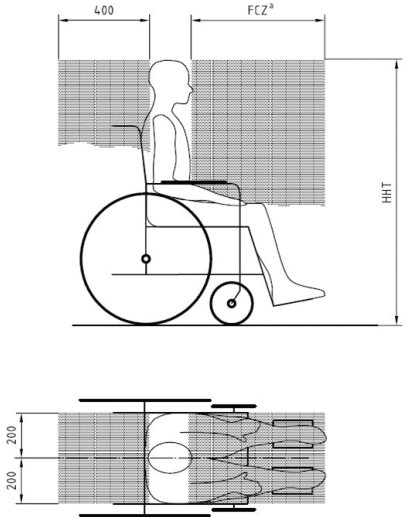
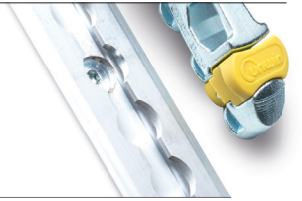


Figure A

Fit and use

Fitting and using the front tie-downs



rail floor

1. The rail will have been installed in the vehicle in accordance with our own and the vehicle converter's instruction. Position the wheelchair within the vehicle as required.
2. If using tongue & buckle, press the red buckle button down to release the webbed tongue, extend and pass around each of the front wheelchair frame tie-down points, and reconnect the tongue back into the buckle (Fig 1), creating an angle of around 40 to 60° within the front view zone, (Fig 2), (some wheelchairs will indicate these tie-down positions, Fig 3).
3. If using karabiner or hook, position the front tie-down with the karabiner or hook gates facing outwards. Fasten on each of the front wheelchair frame tie-down points, making sure the karabiner hinge gate is fully closed. The webbing should create an angle of around 40 to 60° within the front view zone, (Fig 2), (some wheelchairs will indicate these tie-down positions, Fig 3).
4. Fit the front tie-down ATF (aluminium track fitting) into the front rail by aligning the ATF feet with the cut-out sections of the rail. Locate into the rail, (Fig 4).
5. Press on the ribbed part of the ATF, (Fig 4A), and push firmly towards the wheelchair until the yellow plunger drops and locks into the rail.
6. Install the second front tie-down ATF in the same way, ensuring that each fitting is opposite one another. **IMPORTANT: Check the clips are fully engaged on both sides.**
7. Release the wheelchair brakes and pull back to tension the front tie-downs. Re-apply the brakes.
8. A suitable rear wheelchair tie-down should now be fitted.

Removing the front tie-down

1. Move the wheelchair forward to slacken the front straps and disconnect the tongues from the buckles by pressing the red buckle buttons, or unfasten the karabiners or hooks from the wheelchair frame.
2. Lift the yellow retaining clip fully and pull away from the wheelchair to remove the front straps from the rail. Repeat operation with the opposite strap and store safely.
3. **Note:** If using tongue & buckle, in an emergency, the front tie-downs can be removed from the wheelchair, without the need to release the rears, simply by pressing the red buckle release button.

Figure 1

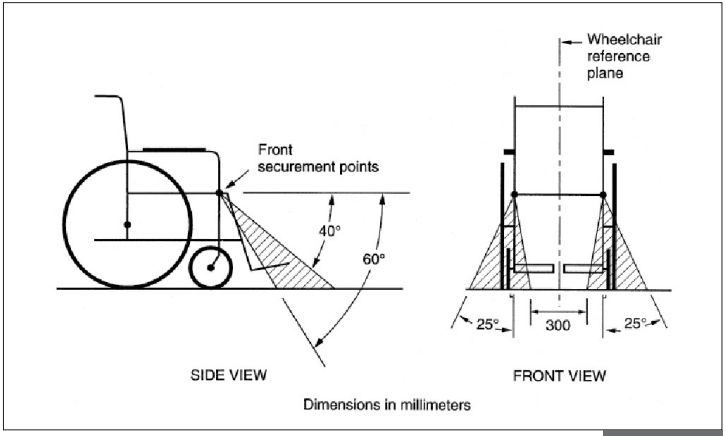


Figure 2

Figure 3

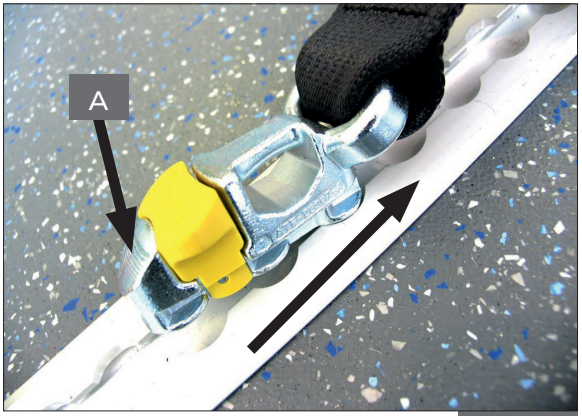


Figure 4

floor anchors

1. The 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.
2. If using karabiner or hook, position the front tie-down with the karabiner or hook gates facing outwards.
3. Install each front tie-down onto a front Solo floor anchor by aligning the protrusion within each cleat to the slot on the floor anchors, (Fig 5).
   Note: protrusion and indent are only applicable with spring loaded anchors, not with static anchors S10.
4. Slide the cleat fully home, (Fig 6), rotate the assembly through 90° to allow the karabiners, hooks or tongue and buckle arrangement to be attached to the wheelchair frame. Install the second front tie-down cleat to its anchor in the same way and align the karabiner, hook or tongue and buckle with the wheelchair frame.
5. If using tongue & buckle, press the red buckle button down to release the webbed tongue, extend and pass around each of the front wheelchair frame tie-down points, and reconnect the tongue back into the buckle, creating an angle of around 40 to 60° within the front view zone, (Fig 2), (some wheelchairs will indicate these tie-down positions, Fig 3)
6. Karabiners and hooks are attached by fastening the fixing over the wheelchair, frame creating the same angle as above. If using karabiners, ensure the hinged gates are fully closed.
7. Release the wheelchair brakes and pull back to tension the front tie-downs. Re-apply the brakes.
8. A suitable rear wheelchair tie-down should now be fitted.

Removing the front tie-down

1. Move the wheelchair forward to slacken the front straps and disconnect the tongues from the buckles by pressing the red buckle buttons, or release the karabiners or hooks from the frame.
2. To remove the cleat from the floor anchor, turn the cleat to align the raised protrusion on the cleat with the indent on the floor anchor (Fig 5) and slide off. Repeat operation with opposite strap and store safely.

   Note: *protrusion and indent features are only applicable to retractable anchors, not static anchors S10. When using S10, turn the cleat back through 90° and slide off.*

Figure 2

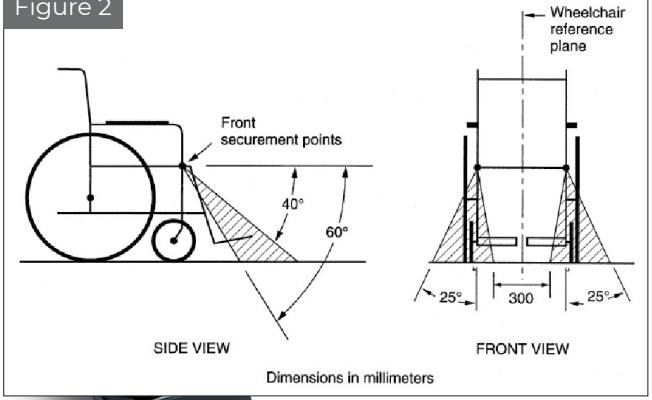
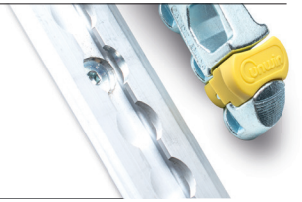


Figure 5

Figure 3

Figure 6



rail floor - Titan 1

1. The rail 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.
2. The front straps must be fitted into the rail, with the yellow plungers facing the front of the vehicle.
3. Press on the ribbed part of the ATF, (Fig 4A) and push firmly towards the wheelchair until the yellow clip drops and locks into place. Install the second clip. The position of this must be in line with the first. **IMPORTANT: Check the clips are fully engaged on both sides.**
4. Remove the webbing from the Velcro and release the over-centre buckle by pressing down the spring loaded bar.
5. Attach the front karabiner to the tie-down brackets, (Fig 7), fitted to the front of the wheelchair. Pull the webbing gently through the over-centre buckle to remove any slack and create an angle of around 40 to 60° within the front view zone (Fig 2).
6. Close the buckle using both hands, (Fig 8) and re-secure the Velcro. **IMPORTANT: Do not over tension the tie-down straps.** Apply sufficient tension to the webbing straps so that the body of the over-centre buckle can be rotated 90° on either side of its natural line of attachment with moderate hand effort, (Fig 9). Repeat operation with the other strap. Ensure that both straps are similarly tensioned.
7. The rear tie-down must now be fitted. Please refer to the content page for the appropriate user instructions.

Removing the front tie-down

1. Remove the webbing from the Velcro, release the over-centre buckle on the front strap, loosen the webbing and remove the karabiner from the wheelchair frame.
2. Pull the webbing, close the over-centre buckle and re-secure the Velcro.
3. Lift the yellow retaining clip fully and pull away from the wheelchair to remove the front straps from the rail. Repeat operation with the opposite strap and store safely.

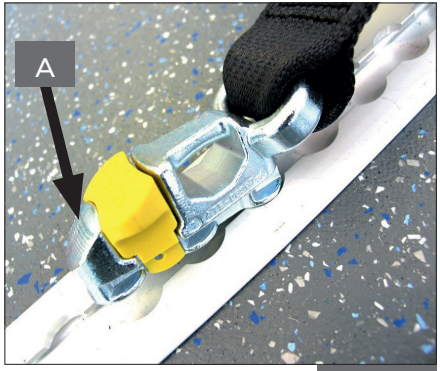


Figure 4

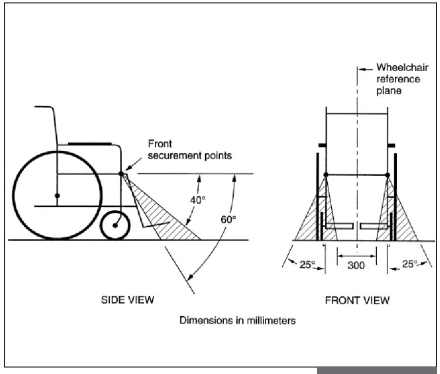


Figure 2

Figure 7

Figure 8

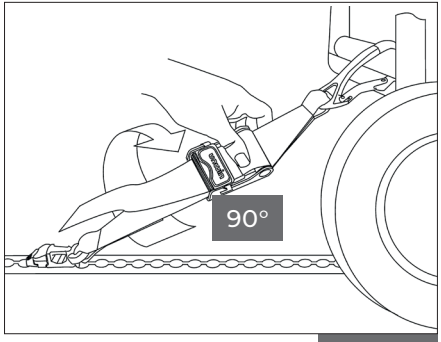


Figure 9

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 a wall mounted storage bag such as SLR111.

- Regularly inspect the wheelchair tie-down systems 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 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 /

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Declares that the products /

RFT, RFH, RFK, SFT, SFH, SFK, BFJ,
RFJ, SFJ OF08 OF01, OFS01, RAFT

Conforms to applicable paragraphs in the 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
2001/85/EC
R.107.2
2007/46/EC

BraunAbility, Martock, 1st April 2020

Rob Butcher
Director of Engineering

Quality system certified in accordance with ISO 9001:2015

UI2296-E 2020/04

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