

## TITAN 2

# Tie-down System for Transportable Wheelchairs Rated at 200kg

(T02)

Registered Design No. 001099543-0001

## USER OPERATING INSTRUCTIONS



**Read instructions fully before use.**

**Application list on the next page.**

**It is recommended that training be given on the proper use of this product.**

**Retain this manual for future reference.**

**Additional copies are available upon request.**

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UI1779F



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  - Balder F290, F280, F270
  - Handicare Puma, Y.E.S and Beatle (front and rear wheel drive).
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## A. INTENDED USAGE

1. The TITAN 2 wheelchair tie-down is used for the securement of transportable wheelchairs used as a forward facing seat in a motor vehicle -as recommended by the wheelchair manufacturer. (See Unwin Guide for full Applications List).
2. The Titan 2 is a four point tie-down system, therefore both front and rear webbing tie-downs must be used as instructed.
3. In addition to the details given in these Instructions, users of the TITAN 2 tie-down system 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.
4. 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.
5. An additional occupant restraint system will be required when the wheelchair is occupied by a passenger whilst in transport. (See Unwin Instructions UI1360 for Double Inertia Split Reel , DI/SR).
6. Unwin products are tested using Unwin vehicle anchorages and full warranty applies to Unwin equipment fitted and used in accordance with Unwin instructions.

## B. WHEELCHAIR APPLICATIONS

1. The Titan 2 tie-down system has been tested and fulfils the requirements of ISO 10542 Part 5 when used in combination with the wheelchairs as listed below.
  - Invacare Zephyr
  - Balder F290, F280, F270
  - Handicare Puma, Y.E.S and Beatle (front and rear wheel drive).
2. The development of Unwin wheelchair tie-downs is a continuous process. Applications are added on a regular basis. Contact Unwin Safety Systems or go to our website for full updates.

## C. CONDITIONS OF WARRANTY

1. Unwin products are tested using Unwin vehicle anchorages and full warranty applies to Unwin equipment fitted and used in accordance with Unwin Instructions for Use.
2. Unwin have also participated in test programs with various wheelchair manufacturers 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 Unwin Sales Office.
3. In other situations where Unwin has not participated in joint test programs, a limited Unwin warranty will apply.

## D. WARNINGS

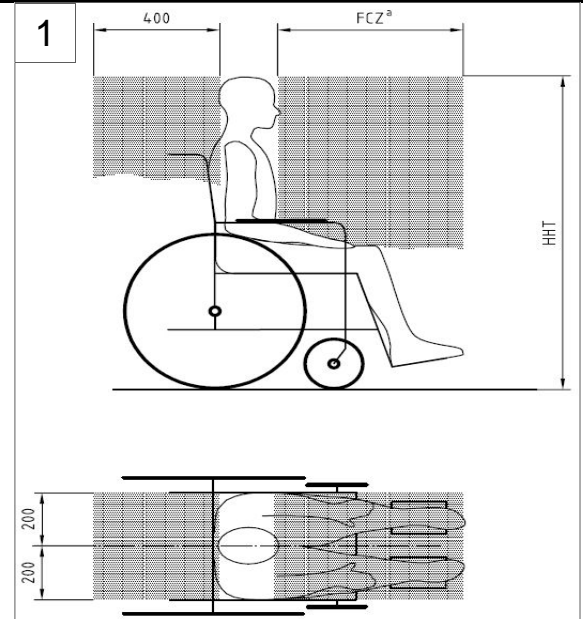
1. Wheelchair accessories that have not been approved by the wheelchair manufacturer must be removed from the wheelchair and secured in the vehicle during transport to reduce the potential for injury. Refer to the manufacturers 'Instructions For Use in Transport' provided with the wheelchair or contact wheelchair supplier for further guidance.
2. Please read this manual before using the Titan 2 system.
3. Regular inspection of all parts is recommended and the equipment should be used only if all components are in good condition.
4. Replace equipment when the webbing becomes cut, contaminated or frayed.
5. Any restraints which have been subjected to a crash situation should, in the interest of safety, be replaced immediately.
6. Do not attempt to modify the equipment. If there is a problem please contact Unwin Safety Systems.
7. Avoid contact with corrosive liquids and keep the webbing away from sharp edges. Care should be taken to prevent contamination of the webbing with polishes, oils and chemicals.
8. If the proposed installation cannot be made to comply with the following requirements, please contact Unwin Safety Systems.

## E. GENERAL TRANSPORT GUIDANCE

1. Ensure that the wheelchair is correctly maintained and that settings of any adjustable parts are made according to manufacturers 'Instruction for Use in Transport'.
2. Remove any items of luggage that may be attached to the wheelchair and secure or store separately during transport in order to reduce the potential for injury to others passengers travelling in the vehicle.
3. Extra care must be exercised when using vehicle boarding aids such as passenger lifts or ramps during the loading process. Refer to Wheelchair manufacturers Instructions for Use for information on safe slopes.
4. Position the wheelchair facing forward - centrally in the designated region of the vehicle. Ensure the wheelchair brakes are applied.

## E. GENERAL TRANSPORT GUIDANCE

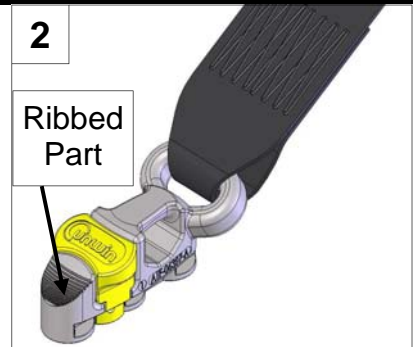
1. To minimise the potential for head injuries in an impact, allow a clear space of at least 400 mm behind and 650 mm in front of the head of the wheelchair user. The shoulder belt anchorage must be side-wall anchored at a height level with or above occupant shoulder level.
2. A height provision ranging from 1200mm 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. If these clear space dimensions cannot be provided then any structure protruding into this space should be adequately padded.
3. Postural support belts are not to be used as occupant restraints.
4. 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. Users of heavy powered wheelchairs are also advised to check vehicle carrying capacity. If in doubt consult vehicle supplier for further details.



## F. USING THE TITAN 2 SYSTEM

### INVACARE ZEPHYR

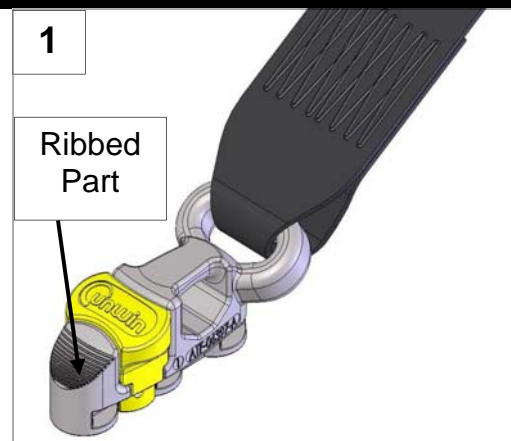
1. The front straps must be fitted into the rail, with yellow plungers facing the front of vehicle.
2. Press on the ribbed part of the ATF (Fig 2) and push firmly towards the wheelchair until the yellow clip drops and locks into the rail. Install the second clip. The position of this must be in line with the first. **IMPORTANT: Check the plungers are fully engaged on both sides.**
3. Attach the front Karabiner to the tie-down brackets fitted to the front of the wheelchair.
4. Reverse the wheelchair to tension the front straps, creating an angle of around 45°.
5. Switch off the wheelchair.
6. Ensure the front of the rear restraint bar is approximately 100mm from the rear tie-down bracket. **IMPORTANT: Check both bars are exactly opposite each other, that the plungers are fully engaged and that the webbing loops face forward. If the webbing loops face rearward then rotate bar, not the webbing loops.**
7. Remove the webbing from the Velcro and release the over-centre buckle by pressing down the spring loaded bar.
8. Release the Snaplock by pressing the red button.
9. Starting on one side of the wheelchair, feed the Snaplock tongue through the tie-down point of the wheelchair and connect with the tongue section, ensuring that the Snap-lock is fully engaged.
10. Pull the webbing gently through the over-centre buckle to remove any slack, creating an angle of around 45°. Ensure that the webbing is not too tight. Close the buckle using both hands and re-secure the Velcro. Repeat with the restraint on the other side, ensure that both straps are similarly tensioned.
11. An occupant restraint should now be fitted. The passenger restraint double inertia should be positioned to allow correct routing of the webbing for the occupant.



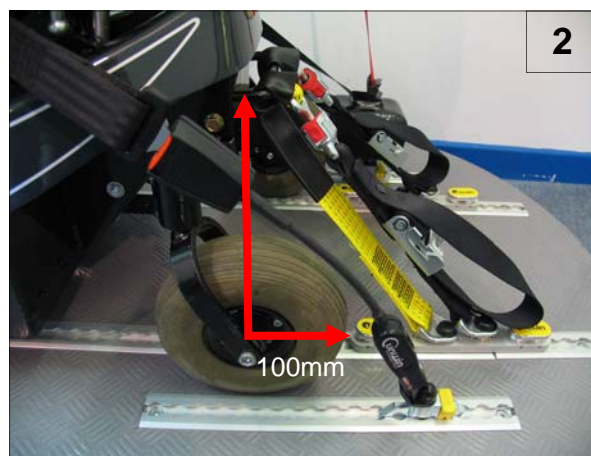
## F. USING THE TITAN 2 SYSTEM

### BALDER F290, F280, F270

1. The front straps must be fitted into the rail, with yellow plungers facing the front of vehicle.
2. Press on the ribbed part of the ATF (Fig 1) and push firmly towards the wheelchair until the yellow clip drops and locks into the rail. Install the second clip. The position of this must be in line with the first. **IMPORTANT: Check the plungers are fully engaged on both sides.**
3. Attach the front Karabiner to the tie-down brackets fitted to the front of the wheelchair.
4. Reverse the wheelchair to tension the front straps, creating an angle of around 45°.



5. Switch off the wheelchair.
6. Fit the rear restraints into the rail behind the wheelchair. Ensure the front of the rear restraint bar is approximately 100mm from the rear tie-down bracket (Fig 2). **IMPORTANT: Check both bars are exactly opposite each other, that the plungers are fully engaged and that the webbing loops face forward. If the webbing loops face rearward then rotate bar, not the webbing loops.**



7. Remove the webbing from the Velcro and release the over-centre buckle by pressing down the spring loaded bar.
8. Release the Snaplock by pressing the red button.
9. Starting on one side of the wheelchair, feed the Snaplock tongue under then over the tie-down point of the wheelchair. Connect with the buckle section, ensuring that Snaplock is fully engaged.
10. Pull the webbing gently through the over-centre buckle to remove any slack, creating an angle of around 45°. Ensure that the webbing is not too tight. Close the buckle using both hands and re-secure the Velcro. Repeat with the restraint on the other side, ensure that both straps are similarly tensioned.

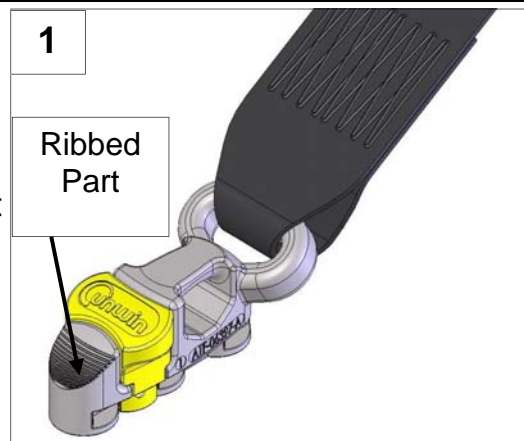


11. The occupant restraint should now be fitted. The passenger restraint double inertia should be positioned to allow correct routing of the webbing for the occupant (Fig 3).

## F. USING THE TITAN 2 SYSTEM

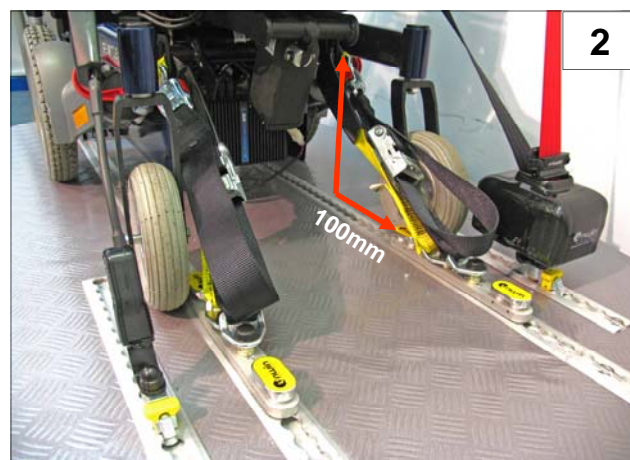
### HANDICARE FRONT WHEEL DRIVE PUMA Y.E.S & BEATLE Y.E.S

1. The front straps must be fitted into the rail, with yellow plungers facing the front of vehicle.
2. Press on the ribbed part of the ATF (Fig 1) and push firmly towards the wheelchair until the yellow clip drops and locks into the rail. Install the second clip. The position of this must be in line with the first. **IMPORTANT: Check the plungers are fully engaged on both sides.**



3. Attach the front Karabiner to the tie-down brackets fitted to the front of the wheelchair.
4. Reverse the wheelchair to tension the front straps, creating an angle of around 45°. Switch off the wheelchair.

5. Fit the rear restraints into the rail behind the wheelchair. Ensure the front of the rear restraint bar is approximately 100mm from the rear tie-down bracket (Fig 2). **IMPORTANT: Check both bars are exactly opposite each other, that the plungers are fully engaged and that the webbing loops face forward. If the webbing loops face rearward then rotate bar, not the webbing loops.**



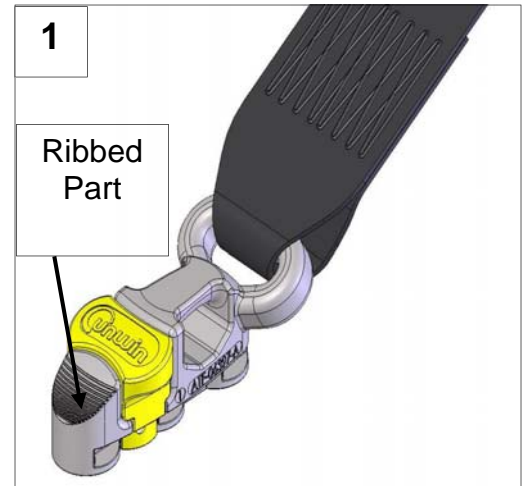
6. Remove the webbing from the Velcro and release the over-centre buckle by pressing down the spring loaded bar.
7. Release the Snaplock by pressing the red button.
8. Starting on one side of the wheelchair, feed the Snaplock tongue under then over the tie-down point of the wheelchair. Connect with the buckle section, ensuring that Snaplock is fully engaged.
9. Pull the webbing gently through the over-centre buckle to remove any slack, creating an angle of around 45°. Ensure that the webbing is not too tight. Close the buckle using both hands and re-secure the Velcro. Repeat with the restraint on the other side, ensure that both straps are similarly tensioned.
10. The occupant restraint should now be fitted. The passenger restraint double inertia reel should be positioned to allow correct routing of the webbing for the occupant (Fig 3 and 4).



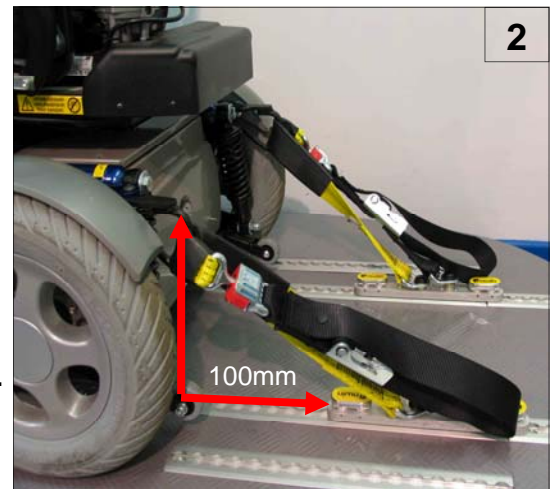
## F. USING THE TITAN 2 SYSTEM

### HANDICARE REAR WHEEL DRIVE PUMA Y.ES & BEATLE Y.E.S

1. The front straps must be fitted into the rail, with yellow plungers facing the front of vehicle.
2. Press on the ribbed part of the ATF (Fig 1) and push firmly towards the wheelchair until the yellow clip drops and locks into the rail. Install the second clip. The position of this must be in line with the first. **IMPORTANT: Check the plungers are fully engaged on both sides.**
3. Attach the front Karabiner to the tie-down brackets fitted to the front of the wheelchair.
4. Reverse the wheelchair to tension the front straps, creating an angle of around 45°. Switch off the wheelchair.



5. Fit the rear restraints into the rail behind the wheelchair. Ensure the front of the rear restraint bar is approximately 100mm from the rear tie-down bracket (Fig 2). **IMPORTANT: Check both bars are exactly opposite each other, that the plungers are fully engaged and that the webbing loops face forward. If the webbing loops face rearward then rotate bar, not the webbing loops.**



6. Remove the webbing from the Velcro and release the over-centre buckle by pressing down the spring loaded bar.
7. Release the Snaplock by pressing the red button.
8. Starting on one side of the wheelchair, feed the Snaplock tongue under then over the tie-down point of the wheelchair. Connect with the buckle section, ensuring that Snaplock is fully engaged.
9. Pull the webbing gently through the over-centre buckle to remove any slack, creating an angle of around 45°. Ensure that the webbing is not too tight. Close the buckle using both hands and re-secure the Velcro. Repeat with the restraint on the other side, ensure that both straps are similarly tensioned.
10. The occupant restraint should now be fitted. The passenger restraint double inertia reel should be positioned to allow correct routing of the webbing for the occupant (Fig 3 and 4).



## G. REMOVING AND STORING

1. Detach the Velcro, undo the over-centre buckle and release the webbing.
2. Release the Snaplock by pressing the red button and remove from the wheelchair mainframe.
3. Lifting the yellow plunger on the restraint, remove the rear straps from the rail.
4. Drive slowly forward to loosen the front straps, unhook the Karabiners from the wheelchair tie-down points.
5. Lift the yellow retaining clip fully and pull away from the wheelchair to remove the front straps from the rail. Repeat on opposite strap.
6. Store the restraint safely off the floor to avoid damage and ensure that it would not become a projectile in an accident. This can be achieved by using wall mounted storage rails or a stowage box.

## H. MAINTENANCE

1. Regularly inspect the restraint for damage, wear or malfunction. If any problems are identified replace it immediately.
2. All webbing and components can be cleaned as necessary, but care should be taken to prevent contamination of the webbing with polish, oils and chemicals.
3. 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 buckles or rail fittings in the disinfectant or water.**
4. 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 Safety Systems.



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