

## Part 6 - Further Information

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Koller also offer a complete range of other products for wheelchair accessible vehicles, including:

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# NEXXUS

## User Instructions



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*Blank / User Notes*

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### Part 1 - Product Statement & Use

These User Instructions provide detailed operating instructions for the NEXXUS wheelchair restraint & passenger harness.

<i>Part Number</i>	<i>Description</i>
<b>KFP0089/FRK</b>	<b>Karabiner, Universal TITUS harness</b>

NEXXUS conforms to the dynamic test requirements of ISO 10542 for wheelchairs up to 200kg, PLUS passenger.

NEXXUS is designed to secure one forward facing wheelchair and one passenger. It must be used in Koller Low Profile or Surface Rails (or equivalents).

These instructions should be read thoroughly before operating the product and retained for future use.

**Note:** NEXXUS is supplied with a Universal TITUS passenger harness as standard i.e. it is fitted with a Belt Clip AND “extra” Tongue on the blue shoulder belt. When used in standard configuration, the extra tongue is not used. When used as a 3-point harness, the extra tongue is used and the belt clip is not used. If a 3-point version is not ordered, simply order an extra strap to use TITUS as a 3-point harness:

<i>Part Number</i>	<i>Description</i>
<b>3PT/STRP</b>	<b>3-point belt for TITUS Harness, removable</b>
<b>3PT/STRP/FIX</b>	<b>3-point belt for TITUS Harness, bolted</b>

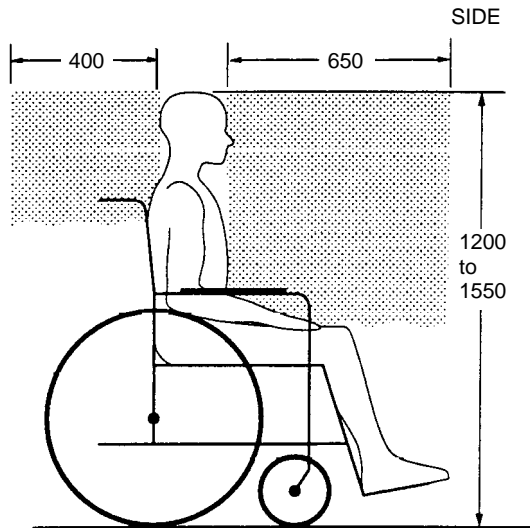
**Part 2 - Component Identification**



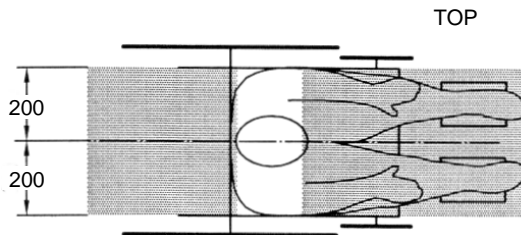
### Part 3 - Operating Instructions - Fitting

- a) Whenever possible, space of around 1300mm by 750mm should be provided (with enough headroom) to allow wheelchair manoeuvre and passenger comfort. Within this space, at least 650mm should be clear from the front of the wheelchair passenger's head forward and 400mm clear from the back of the head rearward.

There should be no rigid vehicle components within the shaded areas. If this is not possible, rigid vehicle components within this area should be covered in padding that conforms with the impact requirements of FMVSS 201, EC 74/60 or UN/ECE 21.



The shaded areas in front of and behind the occupant's head should where possible be completely clear of any components (except a headrest).



All dimensions in mm

### Part 5 - Warnings & Maintenance

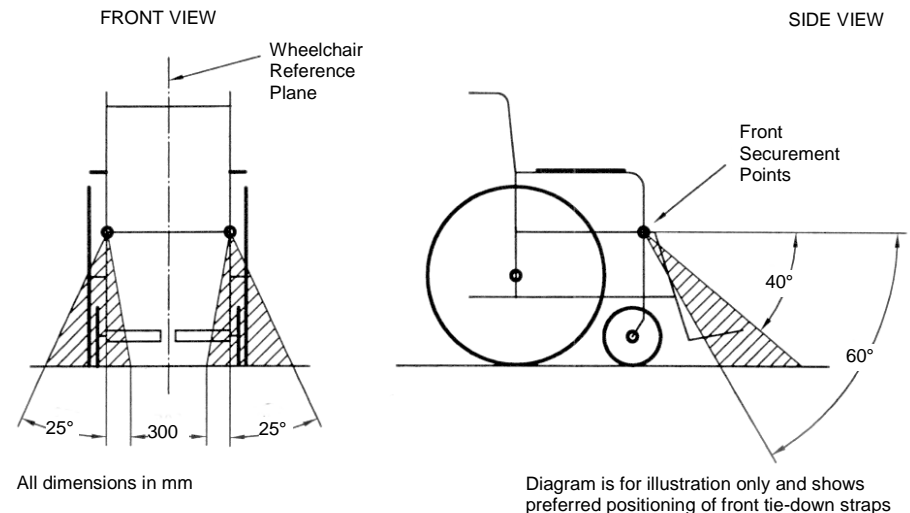
- The use of other products, other than those supplied with the Restraint or specified for use with the Restraint may compromise performance. Products suitable for use with this restraint include:
 

<b>KFP0034</b>	<b>TITUS Extension Strap</b> - accessory
<b>KFP0061</b>	<b>Support Belt</b> - accessory
<b>3PT/STRP</b>	<b>3-point Strap</b> - for use with TITUS Harness
<b>3PT/STRP/FIX</b>	<b>3-point Strap</b> - for use with TITUS Harness
- The Restraint is for **FORWARD FACING** wheelchairs only.
- The Restraint is for use with only one wheelchair and one passenger at a time.
- DO NOT** use the restraint to secure a wheelchair heavier than that stated under **Product Statement & Use**.
- Restraint components including anchorages, should be replaced if they are suspected to have been in use during an impact from which the vehicle must be towed.
- All Restraint webbing and components should be inspected, cleaned and maintained regularly.
- Care should be taken to prevent contamination of the webbing with polishes, oils, chemicals and particularly battery acid, along with procedures and materials to be used for cleaning parts of the Restraint.
- Frayed, contaminated or damaged webbing, and broken or worn parts should be replaced.
- Webbing should be protected from contacting sharp edges and corners.
- Postural support belts **MUST NOT** be used as occupant restraints.
- Auxiliary wheelchair equipment should be effectively secured to the wheelchair or removed and secured safely in the vehicle during transport, so as not to break free and cause injury to vehicle occupants in an impact.
- Items attached to the wheelchair in front of the wheelchair occupant, other than footrests, should be removed whenever possible and secured safely in the vehicle during transport in order to reduce the potential for injury to the wheelchair occupant and others in the vehicle.

#### Part 4 - Operating Instructions - Removing

- a) Release the belt clip (when using the 3-point belt, release the 3-point belt from the shoulder belt).
- b) Remove the shoulder belt by releasing the mini buckle from the tongue (depress the orange button on the mini buckle) and holding the webbing let it retract back.
- c) Remove the lap belt by releasing the tongue from the stalk (depress the orange button on top of the stalk) and holding the webbing let it retract back.
- d) Open the over-centre buckles (depress the red release bars) and feed a bit of webbing through.
- e) Detach the karabiners from the rings of the static straps and remove the static straps from the wheelchair frame.
- f) Unclip the rear rail clips by lifting the red double plungers and sliding slightly forward or backward.
- g) Release the wheelchair brakes and push the wheelchair forward slightly.
- h) Detach the karabiners of the front straps from the wheelchair frame.
- i) Unclip the front strap rail clips by lifting the red plungers and sliding slightly forward or backward.

- b) Position the wheelchair, facing forward, centrally between the rails being used. Lock the brakes.
- c) Insert both front tie-down strap rail clips into corresponding holes of adjacent rails, close enough to attach to the wheelchair, ensuring the **red plungers lock fully into rails** (push down on the body of the rail clip and slide forward / backward so they lock automatically).
- d) Attach the karabiners to the wheelchair frame, either at points indicated on the frame, or, above the wheel axles on part of the main frame. (Karabiners can face "in" or "out", depending on wheelchair design and which method fits best).



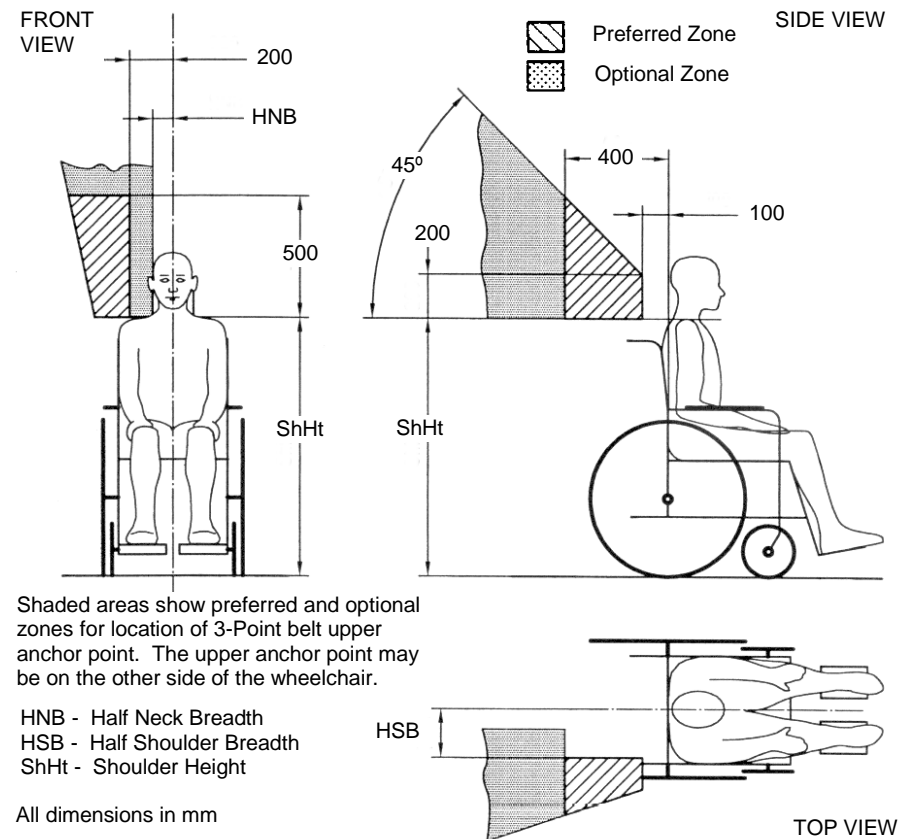
- e) Insert both rear tie-down strap rail clips behind the wheelchair, with the stalk to the inside of the vehicle, ensuring the static straps (with rings) are able to go around the wheelchair frame, and that the **double plungers lock fully into rails** (push down on the rail clip bodies and slide slightly forward / backward so they automatically lock).
- f) Pass the static straps around the wheelchair frame, so that the rings are just fully around.
- g) Open the over-centre buckles (push in red release bar) and feed webbing through so that the webbing is long enough for the karabiners to attach to the rings on the static straps.
- h) Attach each karabiner to the ring on its corresponding static strap.
- i) Pull the webbing through one over-centre buckle while closing it to tension the system. Repeat the other side, ensuring both over-centre buckles are locked.

**Note:** Depending on wheelchair design and which method fits best, karabiners and rings can “face” in or out - see photos below.



- The angle of the lap (pelvic) belt should be within the preferred zone of 45° to 75° to the horizontal, or the optional zone of 30° to 45° to the horizontal.
- Lap and shoulder belts must not be held away from the body by wheelchair components such as armrests or wheels.
- Lap and Shoulder Belts should be adjusted to fit as firmly as possible while still allowing for occupant comfort.
- The Shoulder belt should fit over the shoulder and across the chest.
- Lap and Shoulder Belts must not be worn twisted.



Koller recommend the use of 3-point belts whenever possible. Please refer to previous fitting of lap and shoulder belts and below.

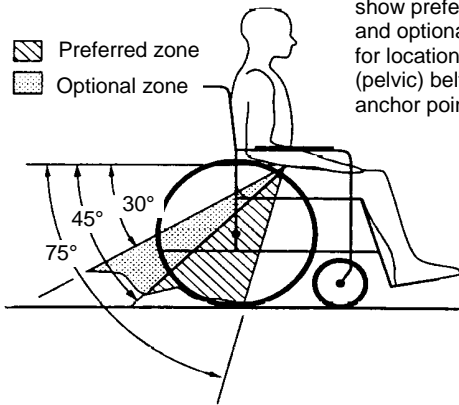


- Upper-torso anchor or webbing guide points that are adjustable in height should be set at or above the wheelchair occupant's shoulder so as not to impose downward loads on the spine in the event of an impact.

For maximum passenger protection, belts should be fitted to individual users and with reference to below.

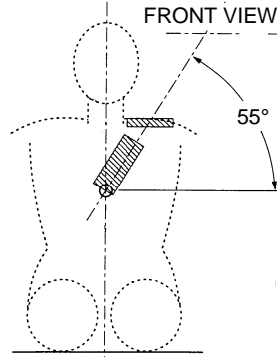
SIDE VIEW

-  Preferred zone
-  Optional zone

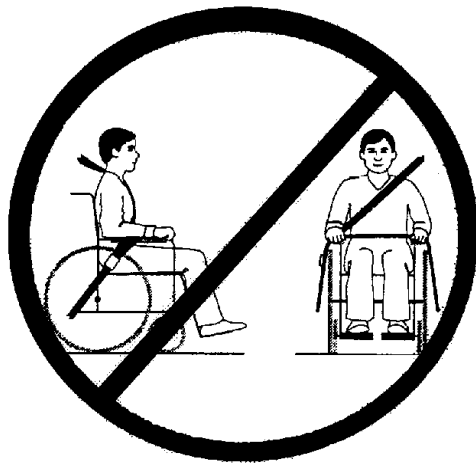


Shaded areas show preferred and optional zones for location of lap (pelvic) belt anchor points.

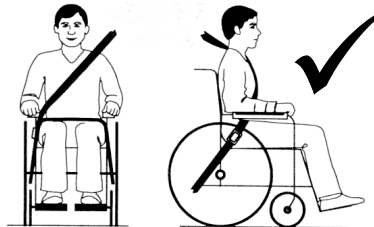
FRONT VIEW



Shaded areas show preferred zones for location of shoulder belt on occupant's torso (may be on the opposite side if the restraint is "handed").



Pelvic belts should make full contact across the front of the body near the junction of the thigh and pelvis



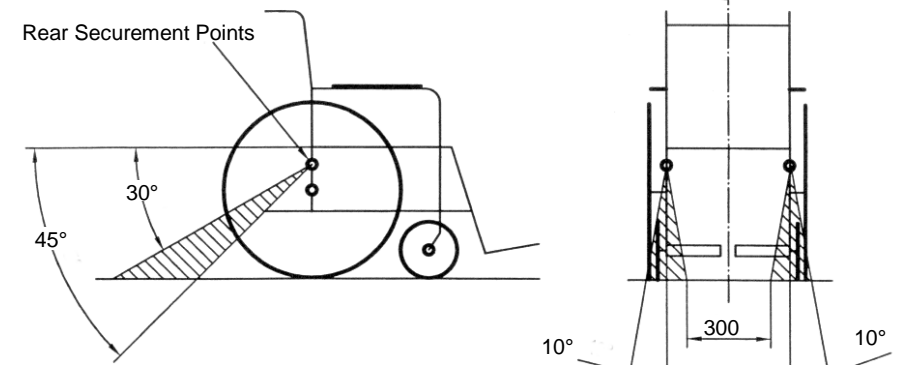
- Lap and Shoulder Belts *must* be used together to reduce the risk of head and chest impacts with vehicle parts.
- The extent of head and chest excursions also depends on the location of the upper torso (shoulder) belt anchor point and may increase as anchor point distance above and behind the occupant's shoulder increases.

SIDE

Rear Securement Points

Wheelchair Reference Plane

REAR



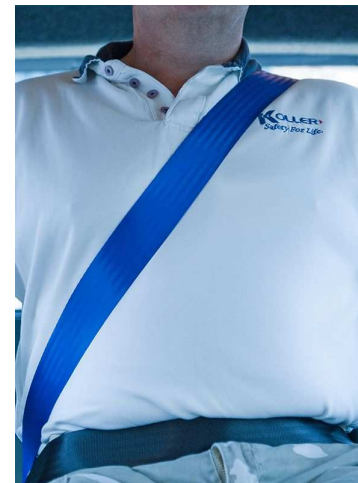
All dimensions in mm

Diagram is for illustration only and shows preferred positioning of rear tie-down straps

- j) Pull out the lap belt (black webbing) from the TITUS harness and fit around the passenger's pelvis, ensuring it does not rest over any wheelchair parts. Clip the large tongue into the stalk until it locks in place.
- k) Pull out the shoulder belt (blue webbing) from the TITUS harness and fit over and across the passenger's shoulder, ensuring it does not rest over any wheelchair parts. Clip the mini buckle into the small lap belt tongue.
- l) Release the belt clip and slide it to the bottom of the shoulder belt so that it rests on the TITUS belt assembly cover. Pull out the shoulder belt webbing slightly, lock the belt clip and then release the shoulder belt (leave the "extra" tongue the belt clip as it is only used for 3-point harness versions - see note below).

Passenger and wheelchair are now secure.

**Note:** If using a 3-point belt, do not use the supplied belt clip, but use the "extra" tongue. First ensure the 3-point belt is fitted to the side of the vehicle. Slide the extra tongue on the shoulder belt up to the passenger's shoulder and clip into the buckle of the 3-point belt. Adjust the length of the 3-point belt so that the shoulder belt is lifted slightly from the shoulder.



Standard shoulder belt



3-point belt fitted