

Transit Guide

Metro Transit Chair

Cruiser Transit Chair

Cruiser Planar Transit Chair

Scout Transit Chair

EZ Rider Transit Chair

EZ Rider Planar Transit Chair

Convertible Transit Chair

Convertible Planar Transit Chair

Rodeo Transit Chair

Safari Transit Chair

Mountee Transit Seating System

Profiler Transit Chair

Clipper Transit Chair



READ INSTRUCTIONS BEFORE USING YOUR NEW WHEELCHAIR

SAVE THIS BROCHURE FOR FUTURE REFERENCE

 **Convaid**

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Introduction

Congratulations on purchasing your new Convoid transit wheelchair, proven safer for use as seating aboard a motor vehicle. This guide includes important information regarding the use of your transit wheelchair. Please read it carefully and keep it for future reference.

When riding aboard a motor vehicle, it is preferred that the wheelchair user transfer from the wheelchair into the vehicle manufacturer's seat and use a federally approved, crash-tested restraint system. However, it may be undesirable for some wheelchair users to transfer to the seat provided by the motor vehicle manufacturer. In these cases, Convoid transit wheelchairs offer a safe alternative.

All Convoid transit wheelchairs comply with a newly developed transit wheelchair standard that requires wheelchairs to be dynamically crash tested. (Largest and smallest sizes of each model have been crash-tested at a leading U.S. university; intermediate sizes may be certified to standard by Convoid.) Proper use of your Convoid transit wheelchair will significantly reduce the likelihood of injury in the event of a motor-vehicle accident.

This guide provides instructions on how to correctly secure your Convoid wheelchair to the bus or van and safely restrain the wheelchair occupant. When selecting a wheelchair, choose the size in accordance with the occupant's weight as shown in the following table.

Seat Width (in. / cm)	Occupant Weight (lb. / kg)	Seat Depth (in. / cm)
10 / 25.5	35-66 / 15.9-29.9	9-11 / 22.86-27.94
12 / 30.5	35-66 / 15.9-29.9	10-13 / 25.4-33.02
14 / 35.5	45-100 / 20.4-45.3	12-15 / 30.48-40.64
16 / 40.5	85-170 / 38.6-77.1	13-16 / 33.02-40.64
18 / 45.5	85-170 / 38.6-77.1	16-19 / 40.64-48.26

Warnings & Precautions

1. **The wheelchair should be used as indicated in the User's Guide instructions accompanying the wheelchair. Failure to do so increases the likelihood of serious injury in a vehicle crash.**
2. A three-point occupant restraint and a four-point wheelchair tiedown system in compliance with SAE J2249 Wheelchair Tiedown and Occupant Restraint Systems for Use in Motor Vehicles should be used at all times during transit.
3. **Use positioning belts or postural supports in a moving vehicle only in conjunction with a crash-tested belt restraint system. NEVER USE POSITIONING BELTS OR POSTURAL SUPPORTS AS MOTOR VEHICLE RESTRAINTS, unless they have been designed, tested, and labeled for this use. (See #4 below.)**
4. **Wheelchair-anchored lap belts intended for use as an occupant restraint in a motor vehicle must comply with Section 19 ANSI/RESNA WC/Volume 1, Wheelchairs Used as Seats in Motor Vehicles, or "WC19." Your Convaid transit wheelchair provides the option of using a crash-tested, wheelchair-anchored lap belt.**
5. **Whenever possible, auxiliary wheelchair equipment (such as an oxygen tank) should be removed from the wheelchair and secured in the vehicle during transit so that it does not break free and cause injury to vehicle occupants during a crash.**
6. **Adequate clear zones are required for occupants restrained by both upper- and lower-torso belt restraints. See Figs. 1 & 2.**
7. **Do not alter or substitute any part or component of the wheelchair, wheelchair frame or wheelchair seating system.**
8. If the wheelchair has been involved in a vehicle crash that requires the vehicle to be towed, it may have been structurally damaged, which could compromise its safety and effectiveness. Wheelchairs involved in such incidents should be returned to Convaid for inspection and evaluation.

RECOMMENDED CLEAR ZONES IN VEHICLE

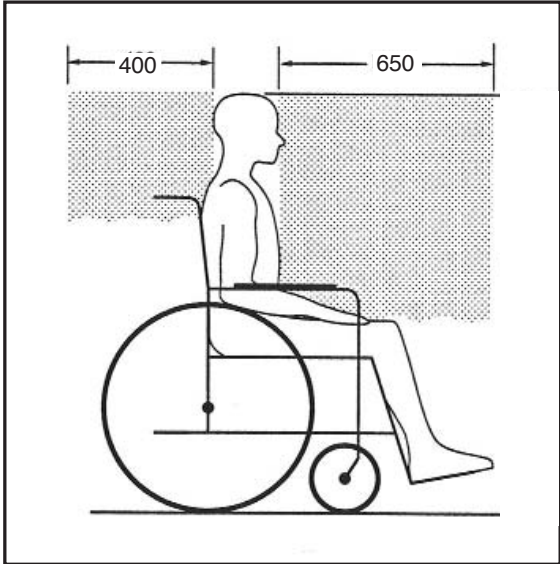
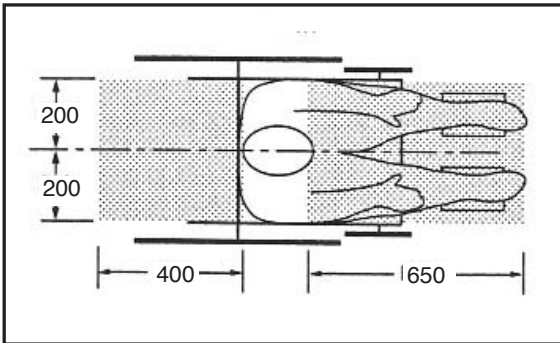


Fig. 1

SIDE VIEW



Note -- Both pelvic and torso restraint belts must be used while traveling aboard a motor vehicle.

Fig. 2

Dimensions shown in millimeters.

The rear clear zone is measured from the rearmost point on an occupant's head. The front clear zone is measured from the frontmost point on an occupant's head.

TOP VIEW

Passenger Safety

Wheelchairs Used as Seating in Motor Vehicles

Before attempting to use your Convoid transit wheelchair as a seat in a motor vehicle, please take a moment to become familiar with some fundamental principles of occupant safety:

- Most serious or fatal injuries occur during frontal-impact crashes.
- The primary cause of injury to motor-vehicle occupants in frontal crashes is a lack of effective occupant restraint, which results in contact with the vehicle's interior components or objects and structures outside the vehicle.
- Effective protection of occupants in frontal impacts requires the use of upper- and lower-torso belt restraints that comply with federal safety standards and WC19. The lower-torso belt restraint should be positioned snugly across the pelvis and the upper-torso belt restraint should be positioned snugly over the shoulder and chest. Belt restraints used in this manner also greatly reduce the likelihood of injury during vehicle rollovers.
- For belt restraints to be effective, the wheelchair must be effectively secured to the motor vehicle, and the belt restraints must remain in position on skeletal portions of the body and not place undue stress on the abdomen.

ANSI/RESNA WC19

For a wheelchair to provide safe seating in a motor vehicle, it is essential that it comply with the safety standard known as Section 19 ANSI/RESNA WC/Volume 1, *Wheelchairs Used as Seats in Motor Vehicles*, or "WC19." Convoid's transit wheelchairs comply with this new voluntary transit wheelchair standard and have been dynamically tested according to the

procedures of Annex A of the standard, which includes the use of a wheelchair-anchored pelvic belt in a 30 MPH/20 g deceleration, frontal impact.

The purpose of WC19 is to:

- reduce the risk of injury to motor-vehicle occupants who remain seated in a wheelchair during transit and
- establish an industry standard so that wheelchairs that comply with this standard will provide a reasonable measure of safe and suitable seating during normal transportation and in a frontal impact.

The standard contains a number of design and performance requirements specifically related to the use of wheelchairs as seating in motor vehicles. Among the most important of these are that:

- wheelchairs provide four easily accessible hook- or strap-type attachment points for strap-type tiedowns with hook- or strap-type end fittings to facilitate wheelchair securement in motor vehicles (see Fig. 3) and
- wheelchairs are crash tested at 30 MPH/20 g deceleration while secured by a four-point strap-type tiedown and loaded with an appropriately sized crash-test dummy. (Note that this is essentially the same level of crash testing required by federal safety standards for passenger motor vehicles.)

When you use your Convaid transit wheelchair as seating in a motor vehicle, it is vital that you use a wheelchair tiedown and occupant restraint system (WTORS) that complies with SAE J2249. As stated in this recommended practice, the wheelchair must be secured in a forward-facing configuration with a J2249-compliant tiedown. The wheelchair occupant should be restrained by both upper- and lower-torso belts for optimal crash protection.

Attach tiedown straps to securement points (red brackets) located on the wheelchair's legs in accordance with the WTORS manufacturer's instructions. Securement points are identified by the symbol in **Fig. 4**, and their location on the wheelchair illustrated in **Fig. 5**. **You must use all four tiedown straps when securing your Convaid wheelchair in a motor vehicle.**

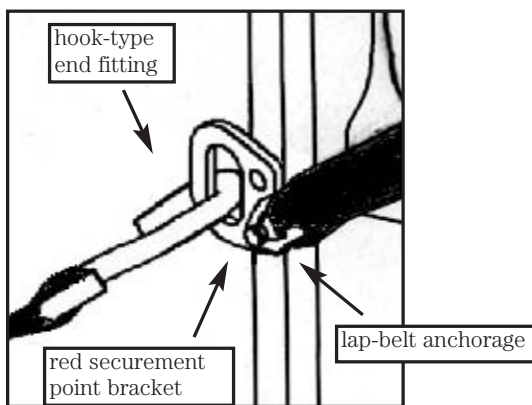


Fig. 3

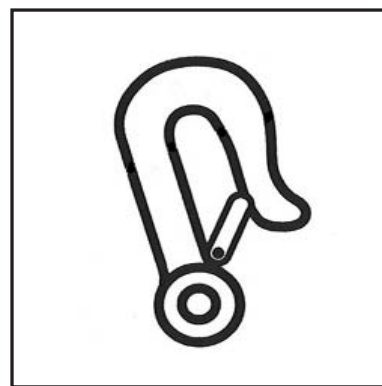


Fig. 4

ILLUSTRATION OF SECUREMENT POINT BRACKET ON WHEELCHAIR FRAME WITH LAP-BELT ANCHORAGE (**FIG. 3**) AND SYMBOL USED TO DESIGNATE WHEELCHAIR SECUREMENT POINTS (**FIG. 4**).

NOTE: Shoulder and pelvic belt restraints must be in good contact with the occupant. Do not place belt over a structure that would hold it away from occupant.

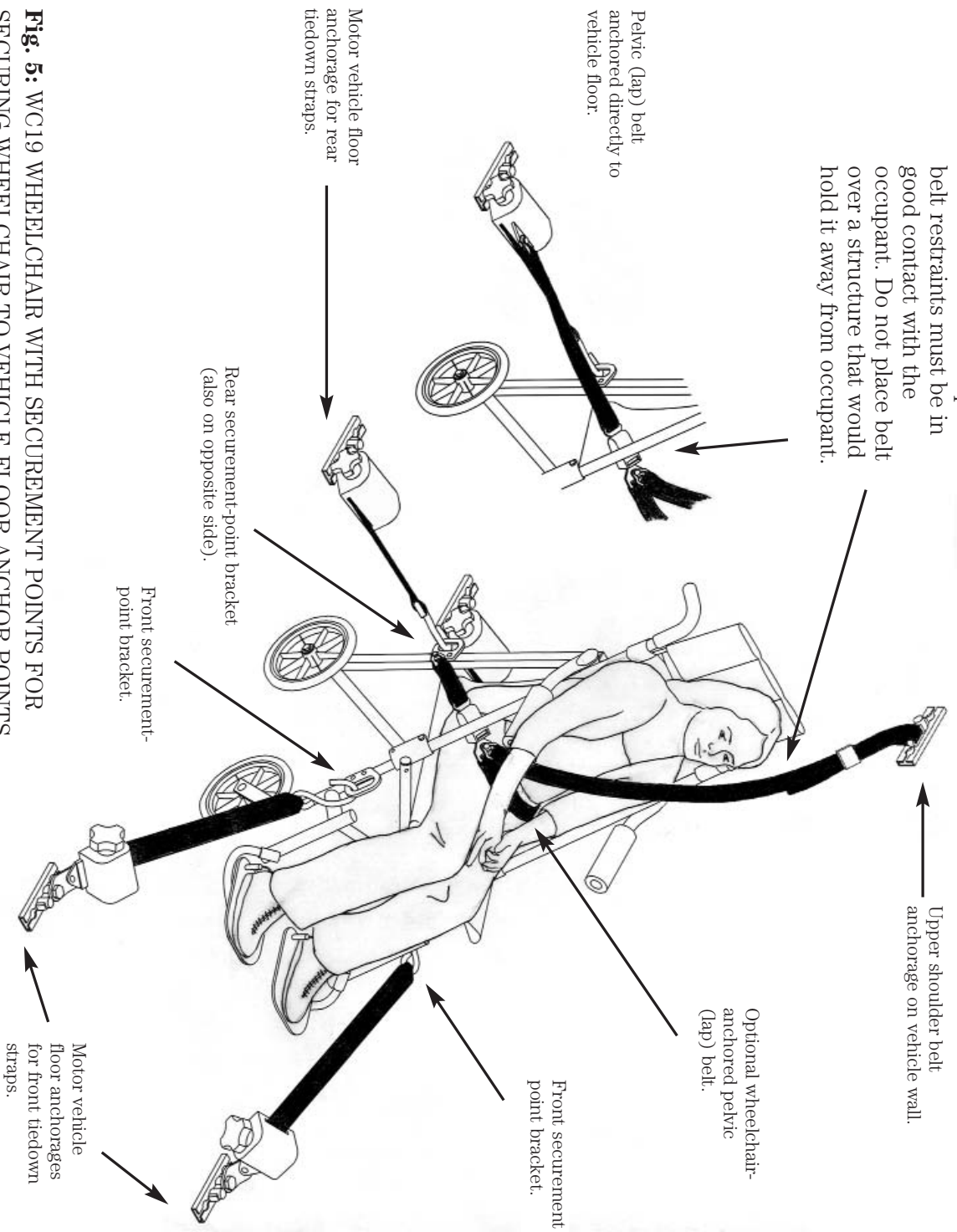


Fig. 5: WC19 WHEELCHAIR WITH SECUREMENT POINTS FOR SECURING WHEELCHAIR TO VEHICLE FLOOR ANCHOR POINTS.

Wheelchair Lateral Stability and Belt Restraint Accommodation Ratings

Wheelchair Model	Mass (Weight) of Wheelchair (lb. / kg)	Test Rating (A,B,C,D)*	Lateral Stability ** (in. / mm)
Cruiser Transit 10	19.0 / 8.6	A	0.25 / 6.4
Cruiser Transit 12	19.1 / 8.7	A	0.35 / 8.9
Cruiser Transit 14	21.1 / 9.6	A	1.18 / 30.0
Cruiser Transit 16	24.6 / 11.2	A	1.97 / 50.0
Cruiser Transit 18	29.8 / 13.5	A	1.57 / 39.9
Cruiser Planar 10	26.8 / 12.2	A	0.39 / 9.9
Cruiser Planar 12	28.1 / 12.8	A	0.50 / 12.7
Cruiser Planar 14	32.5 / 14.8	A	0.75 / 19.0
Cruiser Planar 16	38.6 / 17.5	A	1.58 / 40.1
Cruiser Planar 18	46.4 / 21.1	A	1.18 / 30.0
Cruiser Profiler 14	44.0 / 20.0	A	0.66 / 16.8
Cruiser Profiler 16	50.0 / 22.7	A	1.58 / 40.1
EZ Rider Transit 12	19.6 / 8.9	B	0.79 / 20.1
EZ Rider Transit 14	22.1 / 10.0	A	1.18 / 30.0
EZ Rider Transit 16	22.7 / 10.3	A	1.18 / 30.0
EZ Rider Transit 18	25.0 / 11.3	A	1.57 / 39.8
EZ Rider Planar 14	43 / 19.5	A	0.33 / 8.4
EZ Rider Planar 16	43 / 19.5	A	0.83 / 21.0
EZ Rider Planar 18	50 / 22.7	A	0.79 / 20.0
Safari Transit 12	37.5 / 17.0	A	0.79 / 20.0
Safari Transit 14	38.3 / 17.4	A	1.97 / 50.0
Safari Transit 16	40.2 / 18.2	A	1.97 / 50.0
Safari Transit 18	45.0 / 20.4	A	1.97 / 50.0
Mountee 12	48.4 / 22.0	A	0.33 / 8.4

WHEELCHAIR LATERAL STABILITY

Wheelchair Model	Mass (Weight) of Wheelchair (lb. / kg)	Test Rating (A,B,C,D)*	Lateral Stability ** (in. / mm)
Mountee 14	52.1 / 23.0	A	1.13 / 28.7
Clipper Transit 14	19.5 / 8.8	A	0.79 / 20.0
Clipper Transit 16	23.6 / 10.7	B	1.97 / 50.0
Clipper Transit 18	30.8 / 14.0	A	1.18 / 30.0
Rodeo Transit 12	28.3 / 12.8	A	0.79 / 20.0
Rodeo Transit 14	29.5 / 13.4	A	0.79 / 20.0
Rodeo Transit 16	35.6 / 16.1	A	2.17 / 55.1
Scout Transit 12	30.9 / 14.0	A	0.59 / 15.0
Scout Transit 14	32.0 / 14.5	A	1.18 / 30.0
Scout Transit 16	35.5 / 16.1	A	1.57 / 39.9
Scout Transit 18	38.1 / 17.3	A	1.57 / 39.9
Metro Transit 12	17.0 / 7.7	B	0.39 / 9.9
Metro Transit 14	18.5 / 8.4	B	0.79 / 20.0
Metro Transit 16	21.9 / 9.9	B	1.97 / 50.0
Metro Transit 18	30.2 / 13.7	A	1.18 / 30.0
Convertible Transit 12	30.2 / 13.7	B	0.39 / 9.9
Convertible Transit 14	32.8 / 14.9	B	1.57 / 39.9
Convertible Transit 16	35.4 / 16.1	B	1.57 / 39.9
Convertible Transit 18	36.3 / 16.5	A	1.18 / 30.0
Convertible Planar 14	50.6 / 23	A	0.33 / 8.4
Convertible Planar 16	60 / 27.3	A	1.08 / 27.4
Convertible Planar 16	63 / 28.6	A	1.13 / 28.7

*A = Excellent; B = Good; C = Fair; D = Poor

** “Lateral stability” is the displacement of point P (the center of gravity on the loaded wheelchair) when a platform with the loaded wheelchair is tilted 45° laterally from the horizontal. Higher numbers indicate less stability.

This table refers to tests performed in accordance with WC19 to establish lateral stability during normal travel and the ease of use and proper fit of vehicle-anchored belt restraints. The letter designation reflects the overall rating of the lap and shoulder belt positioning and installation.

Crash-Tested, WC19-Compliant Seating Options

	Fabric Seat & Back	Solid Seat and/or Back Cushion (Standard)	Solid Seat and/or Back Cushion (Optional)	Frame Only with Approved Seating System
Cruiser	X		X	
Scout	X		X	
Clipper	X			
C-2000	X			
EZ Rider	X		X	
Convertible	X		X	
Safari	X	X		X
Rodeo	X			
Metro	X			
Cruiser Planar	X	X		
EZ Rider Planar	X	X		
Convertible Planar	X	X		
Mountee				X
Profiler				X

Proper Use of Equipment

The correct use of equipment that complies with SAE J2249 and ANSI/RESNA WC19 may not prevent all crash-related injuries to wheelchair-seated occupants, but it will greatly reduce the risk of serious injuries.

Securing the Wheelchair

When securing the occupied wheelchair, it is important that the WTORS anchor points on the floor and wall of the motor vehicle are positioned properly according to the WTORS manufacturer's instructions.

The wheelchair must be positioned facing forward inside the vehicle.

Position the wheelchair between the front and rear tiedown anchor points, allowing for the correct angle of adjustment of the tiedown straps, as illustrated in **Fig. 6**.

Your Convaid transit wheelchair can be easily secured by four-point strap-type tiedowns by attaching the hook end fittings of the tiedown straps to the four red securement-point brackets located on the four tubular legs of the wheelchair or by threading tiedown straps through the openings in the securement points.

The floor anchor points and wheelchair should be located:

- so that the tiedown straps follow a straight, clear path from the wheelchair securement points to the floor anchor points and
- so that the front straps are angled outward from the sides of the wheelchair (**see Fig. 7**) and
- so that the rear straps are anchored straight back from the wheelchair securement points

Once all four tiedown straps are attached to the wheelchair:

- inspect all tiedown straps for signs of wear to the webbing and replace any straps that are worn and
- tighten the straps to remove any excess slack and provide tension between the front and rear tiedown straps

CONVAID TRANSIT GUIDE

PREFERRED ANGLES OF FRONT AND REAR TIEDOWN STRAPS (TOP) AND PREFERRED LOCATIONS OF FLOOR ANCHOR POINTS (BOTTOM).

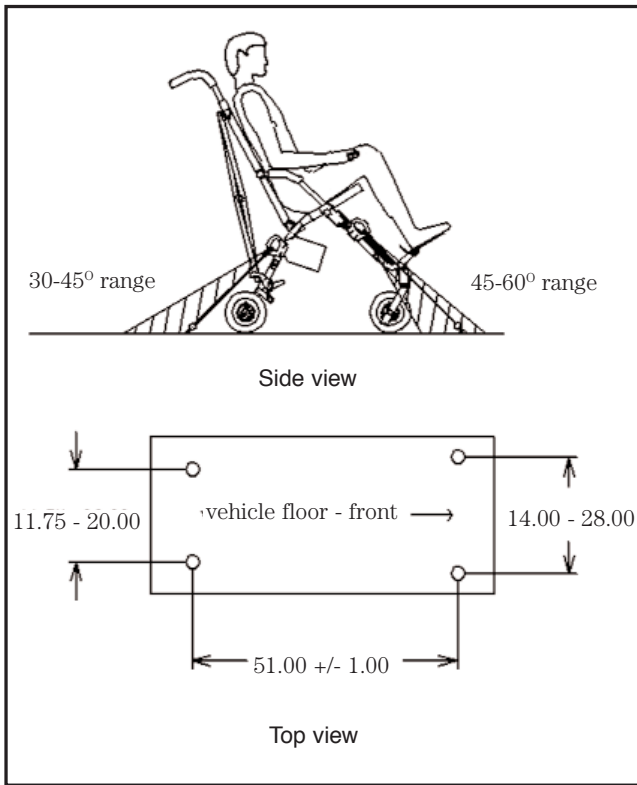


Fig. 6 Dimensions shown in inches.

FIG. 7: FRONT TIEDOWN STRAPS ANGLED AWAY FROM SIDES OF WHEELCHAIR.

FIG. 8: CORRECT POSITIONS OF SHOULDER AND LAP BELT RESTRAINTS AND WHEELCHAIR TIEDOWNS.

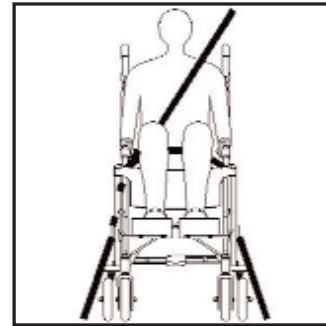


Fig. 7

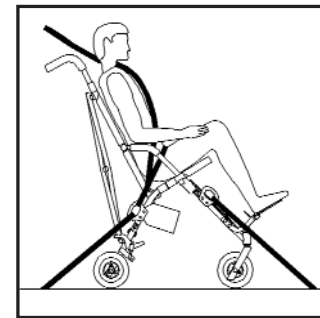


Fig. 8

STANDARD METAL CLIP (FIG. 9) AT LOWER END OF SHOULDER BELT AND AT END OF OPTIONAL WHEELCHAIR-ANCHORED LAP BELT USED TO CONNECT TO PIN/BUSHING (FIG. 10) ON LAP BELT OR ON WHEELCHAIR SECUREMENT POINT BRACKETS.

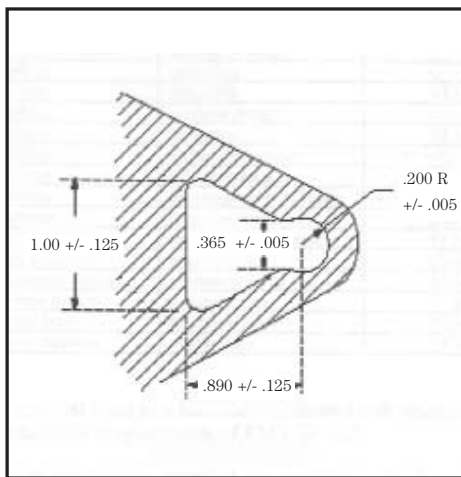


Fig. 9 Dimensions shown in inches.

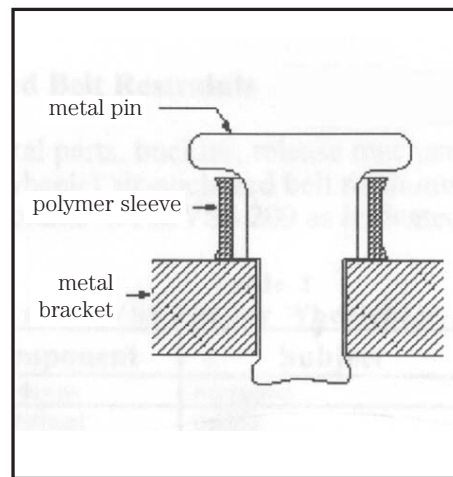


Fig. 10

Providing Clear Space & Padding

Position the wheelchair aboard the motor vehicle to ensure sufficient clear space in front of, and behind, the occupant. **(See Figs. 1 & 2)** If there are any hard or sharp objects or components near the wheelchair, such as components of lifts or fold-up seats, they must be covered with heavy-duty energy-absorbing padding to ensure the safety of the wheelchair occupant and other passengers.

Restraining the Wheelchair Occupant

Your Convoid transit wheelchair was dynamically crash tested in a forward-facing configuration using an appropriately sized crash-test dummy restrained by both upper-torso (shoulder) and lower-torso (lap) belts. To reduce the possibility of head and chest injuries resulting from contact with vehicle components, you must use both upper and lower torso belts. (See Figs. 5, 7 & 8)

Your Convoid transit wheelchair provides for the use of an optional wheelchair-anchored lap belt. The optional belt, which has been dynamically tested in accordance with Annex A of WC19, may be ordered from Convoid at a nominal additional cost. To attach the lap belt to the wheelchair, secure the metal clips at the ends of the lap belt **(Fig. 9)** to the pin/bushing connectors located on the wheelchair's rear securement-point brackets. **(Fig. 10)**

Before loading the wheelchair onto the vehicle lift, fasten the lap belt over the wheelchair user's pelvis. The wheelchair user should wear the optional lap belt as low over the pelvis and as snugly as possible without compromising comfort. The vehicle-anchored shoulder belt may then be clipped to the pin/bushing connector located on the lap belt near where it attaches to the chair. When not in use, the optional lap belt may be looped underneath the seat, buckled, and tightened.

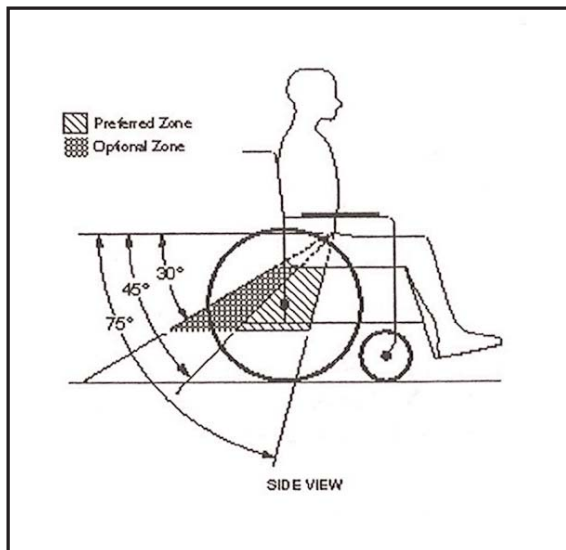
If the wheelchair is purchased without the optional lap belt or if the wheelchair user elects not to use the belt, a vehicle-anchored lap and shoulder belt must be used. As with the wheelchair-anchored lap belt, it is very important to position the vehicle-anchored lap belt low over the pelvis so that the angle of the lap belt is within the preferred zone of 45° to 75° to the horizontal or the optional zone of 30° to 45° to the horizontal, as shown in **Fig. 11**. Be sure that the shoulder belt crosses the chest and the middle of one shoulder and that belt restraints are not held away from the body by wheelchair components or parts, such as armrests or wheelchair legs. **(See Fig. 12)** Thread the lap belt under the frame tubes located directly under the user's elbows and pull the belt snug against the pelvis. Ensure that belt webbing is not twisted as this may compromise safety.

Tilt-in-space wheelchairs (Safari, Mountee and Rodeo models) can also be used for seating aboard a motor vehicle. It is best for tilt-in-space wheelchairs to be transported with the seat in a relatively upright orientation. **However, if the seat must remain in a tilted position for medical reasons, the seat back should not be reclined more than 30° from the vertical. If it is necessary to recline the seat more than 30°, move the shoulder belt anchor point rearward on the vehicle wall so that the shoulder belt remains in contact with the wheelchair user's shoulder and chest.**

Using Postural Belts & Supports

Positioning accessories such as pelvic positioning belts, anterior trunk supports, and lateral trunk supports may be used while in transit, but are not designed to provide restraint during a crash. **Postural supports and belts should therefore not be relied on for restraint in a vehicle crash and should be used only in conjunction with lap and shoulder belts that have been designed for restraint in a motor vehicle and crash tested in accordance with SAE J2249 and/or ANSI/RESNA WC19.**

PREFERRED AND OPTIONAL ANGLES OF PELVIC (LAP) BELT RESTRAINTS.



Note: Steeper side-view pelvic-belt angles are especially important if the pelvic belt is intended to be used for postural support in addition to occupant restraint in a frontal crash. Steeper angles will reduce the tendency for a vertical gap to develop between the user and the belt due to compliance of seat cushions and belt movement, thereby reducing the tendency for the user to slip under the belt or for the belt to ride up on the soft abdomen during normal use.

Note: Steeper belt angles also reduce the tendency for upper-torso belts to pull the pelvic belt onto the abdomen during frontal impact loading.

Fig. 11



Fig. 12

Trays & Other Wheelchair Components

To reduce the risk of potential injury to the wheelchair user or other occupants in a motor-vehicle crash, wheelchair-mounted accessories, such as trays and respiratory equipment, must be removed and secured separately during transit. Use tether straps or other strong attachment hardware to prevent items from breaking loose and causing injury during a crash. If it is absolutely necessary to keep a tray on the wheelchair during transit, energy-absorbing padding must be placed between the edge of the tray and the wheelchair user or serious injury may result during a crash.

WTORS Manufacturers

Convaid is a wheelchair manufacturer and does not offer wheelchair tiedown and occupant restraint systems (WTORS). However, products that comply with current WTORS standards can be obtained from the following companies that specialize in crash-tested WTORS:

FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY CAUSE