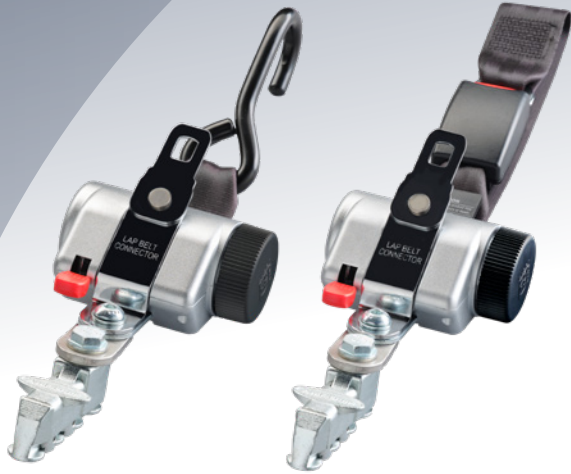


# AMF BRUNS AMERICA

## PROTEKTOR INSTALLATION MANUAL



Congratulations on purchasing  
an AMF-BRUNS product!

### **WARNING**

Carefully read, understand and follow all warnings and instructions provided in this manual, and keep it in a safe place for future reference. If you have any doubt whatsoever regarding the use or maintenance of any AMF-BRUNS product, please contact AMF-BRUNS. Failure to follow these warnings and instructions can result in product malfunction or loss of control of the vehicle, causing an accident, severe personal injury or death.

FOR DOWNLOADS SCAN



[www.amfbrunsamerica.com](http://www.amfbrunsamerica.com)

Part Number: TR600001  
October 2022, Rev05

Dear Purchaser,

Thank you for purchasing an AMF-Bruns of America product. Your product has been designed to provide years of safe and dependable service, as long as it is installed, used and maintained in accordance with the instructions provided in this manual.

All persons who will install, use and/or maintain this product must read, understand and follow all warnings and instructions provided in this manual. This manual should be considered an integral part of your product and should remain with your product. However, nothing in this manual, and none of the safety devices installed on the product, substitute for proper training, careful operation and common sense. Always be sure that your product is in optimum working order. If you suspect that anything is not working properly, or that a dangerous situation may exist, immediately contact your dealer or AMF-Bruns of America before you proceed.

If you have any questions concerning the proper use or maintenance of your product, please call your authorized AMF-Bruns of America dealer, contact our Customer Service at 1-877-506-3770 or visit our website at: [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com) for additional instructions.

Sincerely,  
AMF-Bruns of America



## Registration Information

Customer Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Model Number: \_\_\_\_\_

Installation Date: \_\_\_\_\_

Vehicle Make/Model/Year: \_\_\_\_\_

Dealership: \_\_\_\_\_

Technician: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

## INTRODUCTION

### PURPOSE OF THE MANUAL

The purpose of this manual is to provide the instructions necessary for optimum installation, use and maintenance of this AMF-Bruns of America product. Your AMF-Bruns of America product is to be installed and maintained only by a qualified and trained technician. Never attempt any repairs yourself.

NOTICE: Design details are subject to change. Some illustrations may vary slightly in appearance from the product you have.

### LEGEND

To emphasize certain information and procedures regarding the installation and use of this AMF-Bruns of America product, the following symbols may be used in the Manual:



#### **DANGER**

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



#### **WARNING**

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



#### **CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



#### **NOTICE**

Indicates important information relevant to the Product, the installation, maintenance, or other use of the Equipment, or to sections of this Manual to which particular attention must be paid.

## I. GENERAL WARNING AND INSTRUCTIONS



### WARNING



Failure to follow all of the warnings and instructions in this manual could cause product malfunction, loss of control of the vehicle or an accident, resulting in severe personal injury or death to the vehicle occupants, other motorists or pedestrians.

1. Throughout this manual, reference is made that “an accident” could occur. Any accident could cause severe personal injury or death, or result in property damage.
2. The product must be installed and repaired/modified by AMF-Bruns of America or an authorized dealer.
3. Read entire manual before using your product.
4. Never attempt any adjustment of this product while the vehicle is moving.
5. If the vehicle was involved in an impact which resulted in the vehicle being towed away from the scene, the wheelchair tie down and occupant restraint system components -- including straps, belts and anchorages – must be replaced, even if there is no visual damage.
6. If you experience any malfunction or questionable operation of this product, DO NOT USE THE VEHICLE. Contact AMF-Bruns of America or an authorized dealer for inspection and repair.
7. Do not modify any components of the product.
8. This product was designed to operate as a single integrated system. Do not substitute any component with a part supplied by a different manufacturer. Even if they look identical, their performance and operation could be different.
9. AMF-Bruns of America provides customers with safe and reliable products. Our product performance is optimized with proper preventative/regular maintenance. To ensure maximum product performance, a maintenance program is beneficial.
10. Each installation shall be carefully reviewed and tested by the installer to ensure that the specific application is in compliance with Local, State and Federal regulations governing the installation of wheelchair tie-down and occupant restraint systems.
11. Some wheelchairs may not be suitable for use as a seating device in motor vehicles. Refer to the wheelchair owner’s manual for the manufacturer’s recommendations.
12. Use this system only with forward-facing wheelchairs.
13. Airbags should be disconnected if the wheelchair passenger is positioned less than 7” (175mm) from the airbag module, or if any after-market device is installed so as to block or compromise deployment of the airbag.

## II. SPECIFIC WARNINGS AND INSTRUCTIONS

### A. SECURING THE WHEELCHAIR (Figure 3 - Page 9).

1. Anchor straps shall only be secured to the wheelchair's frame or designated attachment points. Never attach to footrests, wheels or any detachable portion of the wheelchair. Never pass straps through wheels of wheelchair.
2. Do not allow the straps to conform or bend around any object such as wheels or footrests. The securement straps must have a clear, straight load path from the floor tracks or plates to where they attach to the wheelchair frame or designated attachment points.
3. Floor anchorages such as tracks or floor pockets should be free of dirt and debris as they can interfere with proper system operation.
4. Once you have all four straps attached, release the brakes on the wheelchair and check for movement. Once secured, the wheelchair should not move more than two (2) inches front to back or side to side. Re-apply the brakes.



#### **WARNING**

5) Never use the static straps on all four points of attachment to the wheelchair frame. They should be used **ONLY** as front tie-downs. The static strap is primarily a slack-removing device and can only tension to the extent of the operator's strength and angle of pull. At least two of the securement strap assemblies need to have full tensioning capability, i.e. ratchet, over-center buckles.

6. Do not cross-connect the securement strap assemblies. This may place added stress or unequal load forces on the wheelchair frame and may lead to potential collapse or tipping of the wheelchair.
7. Protect straps from sharp edges and corners.
8. If proper attachment and securement of a particular style of wheelchair cannot be accomplished, or if you have any doubt whatsoever, contact your dealer or AMF-Bruns of America.

### B. SECURING THE PASSENGER (Figure 9 - Page 16).

1. AMF-Bruns of America's restraints are designed to bear upon the bony structure of the body and shall be worn low and snug across the front of the pelvis, with the junction between the lap and shoulder belts located near the passenger's hip. The lap belt shall not be worn across the abdominal area. Adjust occupant restraints as firmly as possible consistent with user comfort.
2. Seat belts must be snug and flat against the body and should never be twisted. They should never be held away from the body by wheelchair components such as armrests or wheels.
3. Make sure the seat belt strap does not become twisted inside the retractors.
4. Never rely on the wheelchair's lap belt or other occupant belts that are not tested and approved for use as an occupant restraint.
5. This product is not designed for use with only a pelvic restraint. Always use only a lap/shoulder belt combination.
6. Protect seat belt webbing from sharp edges and corners.
7. Use this system with only with forward-facing wheelchairs.
8. Whenever possible, any non-essential items attached to the wheelchair in front of the occupant should be detached and secured separately during transportation.  
be detached and secured separately during transportation.

9. Shoulder belt upper anchorage or guide support should always be positioned so that:
  - a. Belt webbing always lies across the center of wheelchair passenger's chest and shoulder (See Figure 9), and
  - b. It extends upward and rearward of the wheelchair occupant's shoulder level to avoid any downward force on the spine. (See Figure 9 - Page 16)
10. Never extend the shoulder belt across the face or neck of the occupant.
11. Do not use postural support belts (belts that simply go around the occupant and mobility aid) in lieu of an approved, FMVSS certified lap belt, designed and tested to be used in conjunction with the securement system.
12. Always use use an AMF-Bruns' storage pouch and AMF-Bruns' storage box for proper storage of belts when not in use.
13. Every vehicle should be equipped with a web cutter for use in an emergency evacuation.
14. A common wheelchair securement & occupant restraint system contains the following and are to be used as a complete system:
 

(4) Retractor Tiedowns	(1) Occupant Lap belt	(1) Occupant Shoulder belt
(1) Warranty card	(1) Installation instructions	(1) User Instructions
(1) Instruction decal		

#### **Optional equipment recommended:**

- (1) Storage Pouch for each wheelchair position (1) Belt cutter for emergency purposes.

### **C. DAILY INSPECTION CHECKLIST**

At a minimum, the following items should be inspected carefully on a daily basis:

1. Check the retractors by quickly pulling out the webbing to ensure proper locking.
2. Check webbing to ensure it is not nicked, cut, frayed, damaged or contaminated by dirt.
3. Check metal parts to ensure they are not worn, broken or cracked.
4. Check that all mounting hardware (such as bolts, nuts, etc.) is secure.
5. Check floor anchorages to ensure cleanliness and attachment.
6. Check shoulder belt anchorages for proper attachment and operation.
7. Check buckles for damage and to ensure proper operation.
8. Check male buckle tongue to ensure it is not cracked, broken or damaged.
9. Inspect the overall functionality of the restraint system.
10. Inspect all floor and sidewall anchorages such as tracks and plates - including bolts. Check for excessive wear, corrosion and loose fasteners. Clean out any dirt and debris to ensure full and correct engagement of track fittings.

**If you have any doubt whatsoever, DO NOT USE THE SYSTEM.**

**Contact your dealer or AMF-Bruns of America.**

### **D. CARE AND MAINTENANCE**

1. Make sure that the restraints do not come in contact with oil, grease, dust, sand or any other contaminants at any time. For storage, use the AMF-Bruns of America storage box or storage pouch.
2. Clean the restraints on a regular basis with mild cleaning products and/or water. Never use any aggressive cleaners.
3. To avoid damage to the product, do not use sharp objects for cleaning, i.e. knives or scissors.
4. Frayed, contaminated and damaged webbing should be replaced immediately.

III. WHEELCHAIR LOCATION RECOMMENDATIONS

See Section II(A). SECURING THE WHEELCHAIR

!

**WARNING**

!

Improperly securing the wheelchair will reduce the effectiveness of your restraint system in an accident, resulting in personal injury or death.

Figure 1

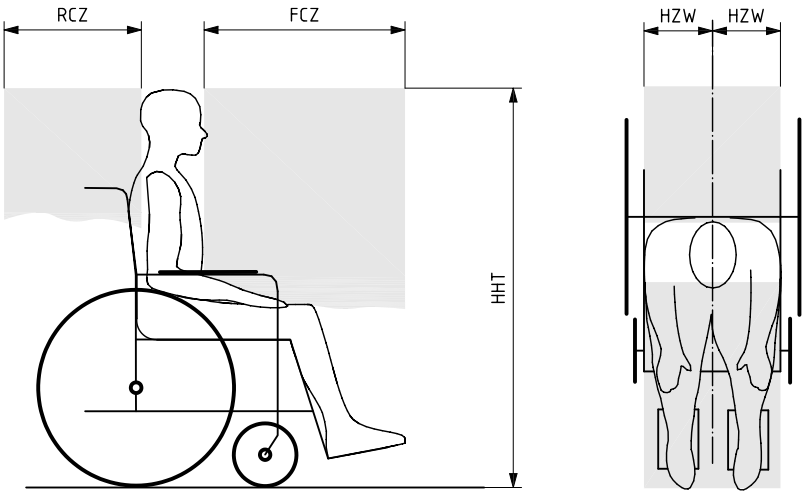
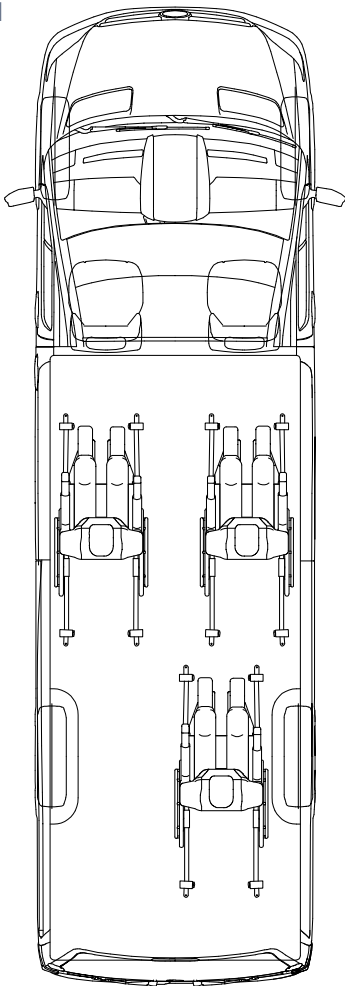


Figure 2  
Clear zones for wheelchair-seated occupants.

RCZ = rear clear zone  
FCZ = front clear zone  
HHT = seated head height  
HZW = half clear zone width

	mm	inch
RCZ	450	18"
FCZ	650	26"
HHT (Adult)	1550	47 - 61"
(Child, 6 yo)	1016	min 40"
HZW	220	9"

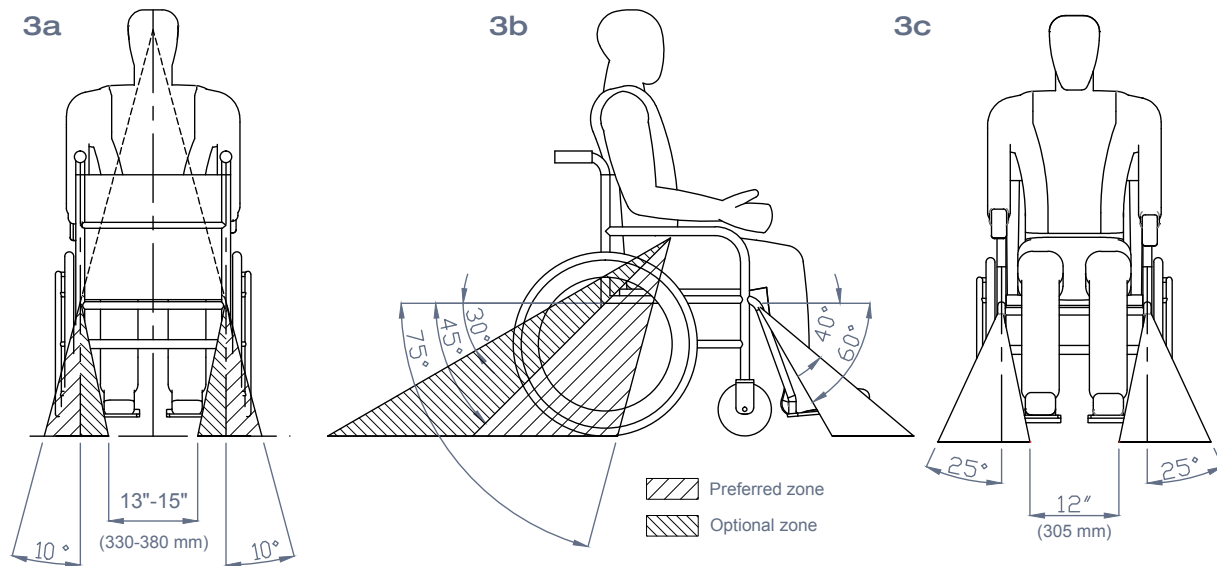
1. Wheelchair locations should be situated as close to the accessible entrance as practical with an unobstructed path to each location provided. Chairs must be placed with occupant & chair facing the front of the vehicle.
2. Ensure there is sufficient space to allow driver/attendant the ability to easily move around wheelchair location, and to properly secure wheelchair passengers.
3. Check for wall clearance, allowing space for installation of floor anchorages and shoulder belt (Figure 1).
4. Wheelchair passenger Front Clear Zone (FCZ) requirements (Figure 2) are based on potential movements of the passenger during a crash. All anchorage points must be positioned to provide the wheelchair occupant with sufficient clearance to avoid contact with other occupants or the interior of the vehicle. See next section.



## IV. FLOOR ANCHORAGE LAYOUT

The following are the best installation practices and distances (center-to-center) between floor anchorages. Optimal angles of tie downs for crash protection and maximum stability of the wheelchair are illustrated in Figure 3.

Figure 3



### Rear Tie Downs:

The lateral distance between anchorages shall be between 13-15" (330-380 mm) such that the anchor points are within 25 mm of the rear wheelchair securement point on most wheelchairs. When looking at the side of the wheelchair (Figure 3b), the straps should preferably make a 30° - 45° angle with the horizontal.

### Front Tie Downs:

The lateral distance between anchorages shall be between 30-34" (762-864 mm) such that the anchor points are outboard of the wheelchair securement points on most wheelchairs. When looking at the side of the wheelchair (Figure 3b), the straps should preferably make a 40° - 60° angle.

**IMPORTANT:** For public transit vehicle installations, the following spacing requirements are safe, acceptable and ADA approved: rear spacing is 13-15" (330-380 mm), front spacing is 30-34" (762-864 mm) and front-to-rear spacing is 42-75" (1-2 m). Spacing greater than 60" (1.5 m) may cause operational difficulties with wheelchair tie downs. Use webbing loops or belt extenders.



## NOTICE



All dimensions are based on common wheelchair sizes. Exceptionally large or small wheelchairs may require different anchorage spacing. If you have any doubts whatsoever, DO NOT USE THE SYSTEM. See your Dealer or contact AMF-Bruns of America for advice.

## See Section II(A). SECURING THE WHEELCHAIR

1. Before installing floor anchorages, check with local transportation and regulatory authorities for minimum/maximum wheelchair location space and emergency exit requirements.
2. Inspect underside of the vehicle floor and note wiring, frames, cross-members, fuel tanks and other possible dangers and obstructions before beginning installation.



### WARNING



Damages to a fuel line, fuel tank or electrical line, even if apparently insignificant, could result in a fire or other malfunction, causing personal injury or death to the vehicle occupants.

3. Recommended distance between the adjacent side wall and the nearest rear floor anchorage should not exceed 20" (510 mm). Greater distance from the wall may prevent proper shoulder belt use, increasing the risk of wheelchair passenger injury.
4. The installer is responsible for ensuring that anchorages are installed onto floor and wall structures. Always use sufficient reinforcement, such as mounting plates and washers, at all anchorage points. The vehicle floor and sidewall structures, where the system anchorages are attached, shall have greater strength than the system being installed. If you have any doubts, contact your dealer or AMF-Bruns of America.
5. Do not install anchorages or any system component into weak materials such as corroded, cracked or deformed metal or wood, or any plastic or fiberglass panels.
6. Backing plates must sit flush against the vehicle surface. Modifications to the backing plate must only be made where absolutely necessary as smaller plate size reduces the floor load distribution. Always leave a minimum of 0.6" (15 mm) adjacent to the bolt hole in the plate.
7. Use only hardware provided by AMF-Bruns of America. If you need additional hardware, contact AMF-Bruns of America at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).

## V. PRODUCT INSTALLATION

The following instructions are the most common floor anchorages.

### A. Installation of the Aluminum L-track

The L-track rail can be installed in the vehicle in combination with a Smartfloor or wood floor lightweight floor components. Three types of profiles are available: Flange, Regular and Surface.

### B. Installation in Wood Floor

1. Determine location of anchorages per Figures 3. L-Track can be installed perpendicular or parallel to wheelchair location (includes full-length track).
2. If surface mount track onto floor (Figure 5), place track on floor and proceed to Step 4. If recessing, insert track (Figure 4) after routing an area in the floor that is 1.42" (36 mm) wide x 1/2" (13 mm) deep for each track and proceed to Step 3. Inspect underside of the vehicle floor and note fuel lines, fuel tanks, electrical wires, utilities, frames, cross-members, fuel tanks or other possible obstruction before beginning installation.



## WARNING



Damages to a fuel line, fuel tank or electrical line, even if apparently insignificant, could result in a fire or other malfunction, causing personal injury or death to the vehicle occupants.

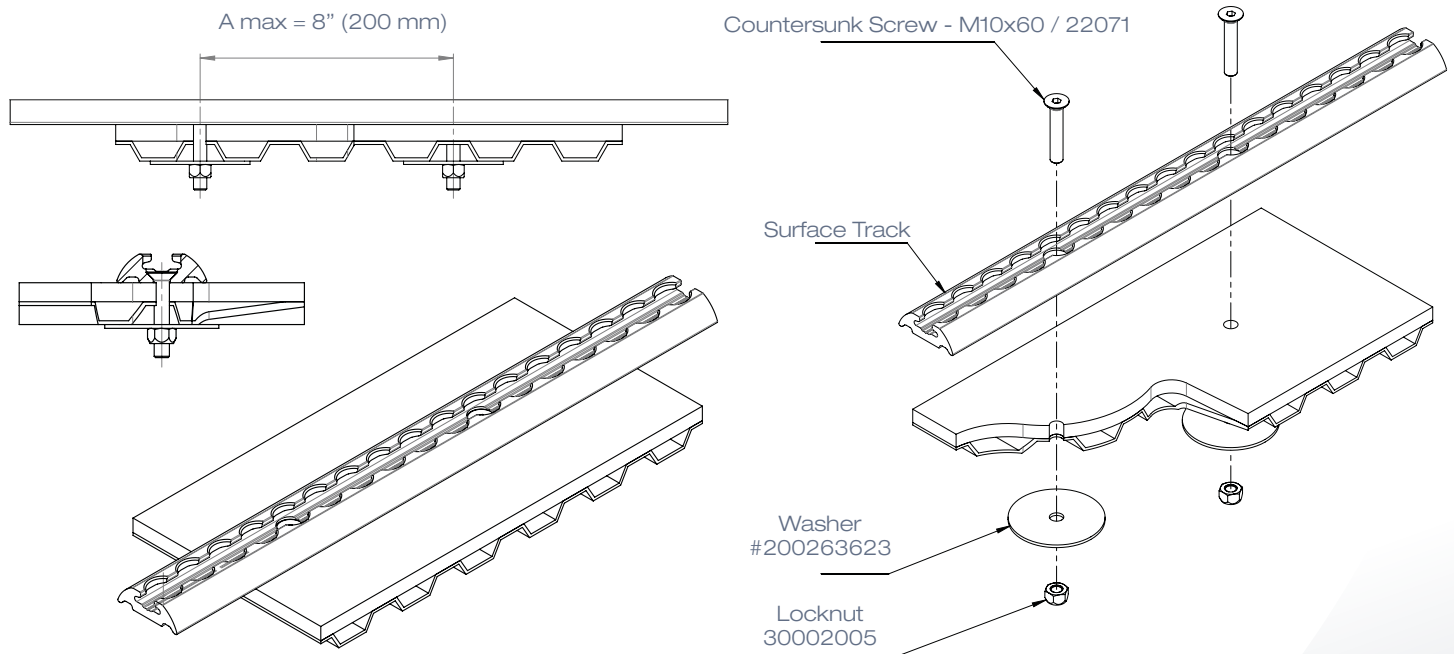
3. Clean out debris and place track in routed areas.
4. Position track and use as a template to center mark holes to be drilled.
5. Remove track and drill 11/32" (8.6 mm) holes through floor per track drilling pattern.

**Note: Standard track drilling pattern = holes every 6" (152,4 mm).**

6. For recessed tracks, place sealant in floor openings and reinstall track.
7. Pass 5/16" (8 mm) bolts through track and floor. If NOT using AMF-Bruns provided hardware, use ONLY minimum GRADE 8 hardware coated for adequate protection against corrosion per ASTM-B117.
8. From underneath vehicle floor, place washers over bolts. The washer should have dimensions of at least (inside diameter x outside diameter x thickness) Ø 0,354" x Ø 2.36" x 0.079" thick (Ø 10.5 mm x Ø 60 mm x 2 mm thick). Sealant may be used between washer and floor if desired.
9. Securely fasten bolts and lock nuts as shown in Figures 4 & 5, ensuring at least 2-3 threads are extending past the lock nut. **Recommended torque = 35 FT/LB (47 Nm).**

**Figure 4**

Aluminum L-track Surface Rail



### Optional Track Accessories:

Install the end caps after the track is partially installed to the vehicle floor. This will provide the end caps freedom to slide into place and be adjusted. Secure the end cap to the floor using the screw. The end caps are to provide a finished surface from the track to the floor.

Protect the tracks from debris/dirt. Track must be clean at all time to ensure retractor fitting is locked and engaged. Track cover available: Part #150351 and 150352.

## Smartdisc Installation (See Figure 6)

### C. Smartdisc

1. Determine location of anchorages per Figure 3 (Page 12).
2. Place disc and use as a template to center mark hole for drilling.



## WARNING



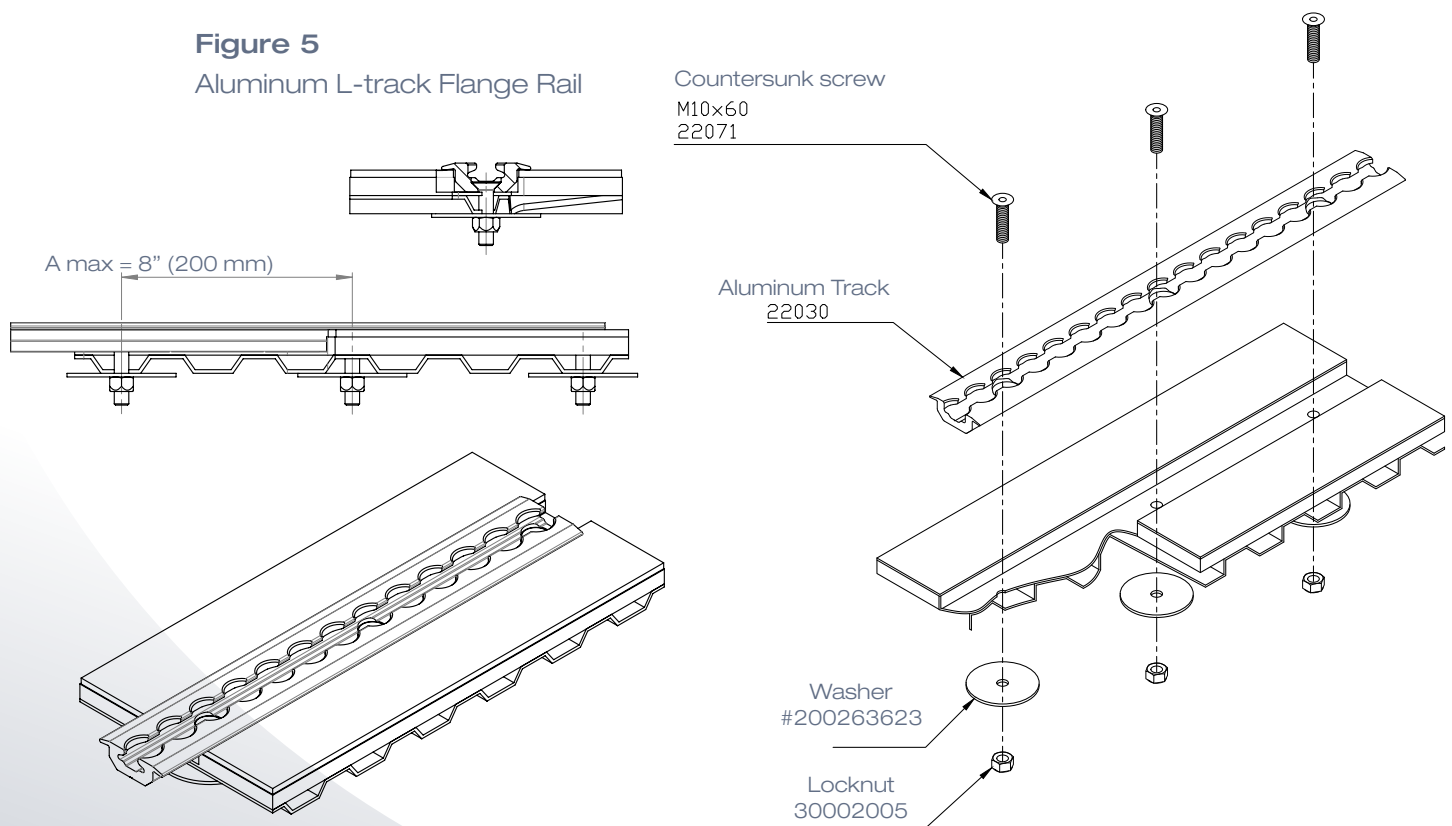
Damages to a fuel line, fuel tank or electrical line, even if apparently insignificant, could result in a fire or other malfunction, causing personal injury or death to the vehicle occupants.

3. Remove disc and drill 12.5mm hole through floor.
4. Clean out debris and place sealant in floor opening. Reinstall disc.
5. Pass M12 bolt through disc and floor.
6. From underneath vehicle floor, place washer over bolt. The washer dimensions should be at least (inside diameter x outside diameter x thickness) thick (12.5mm x Ø 44 mm x 4 mm thick). Sealant can be used between washer and floor if desired.
7. Securely fasten bolt and lock nut as shown in Figure 6, ensuring at least 2 – 3 threads are extending past the lock nut.

**Recommended torque = 92 FT/LB (125 Nm)**

**Figure 5**

Aluminum L-track Flange Rail



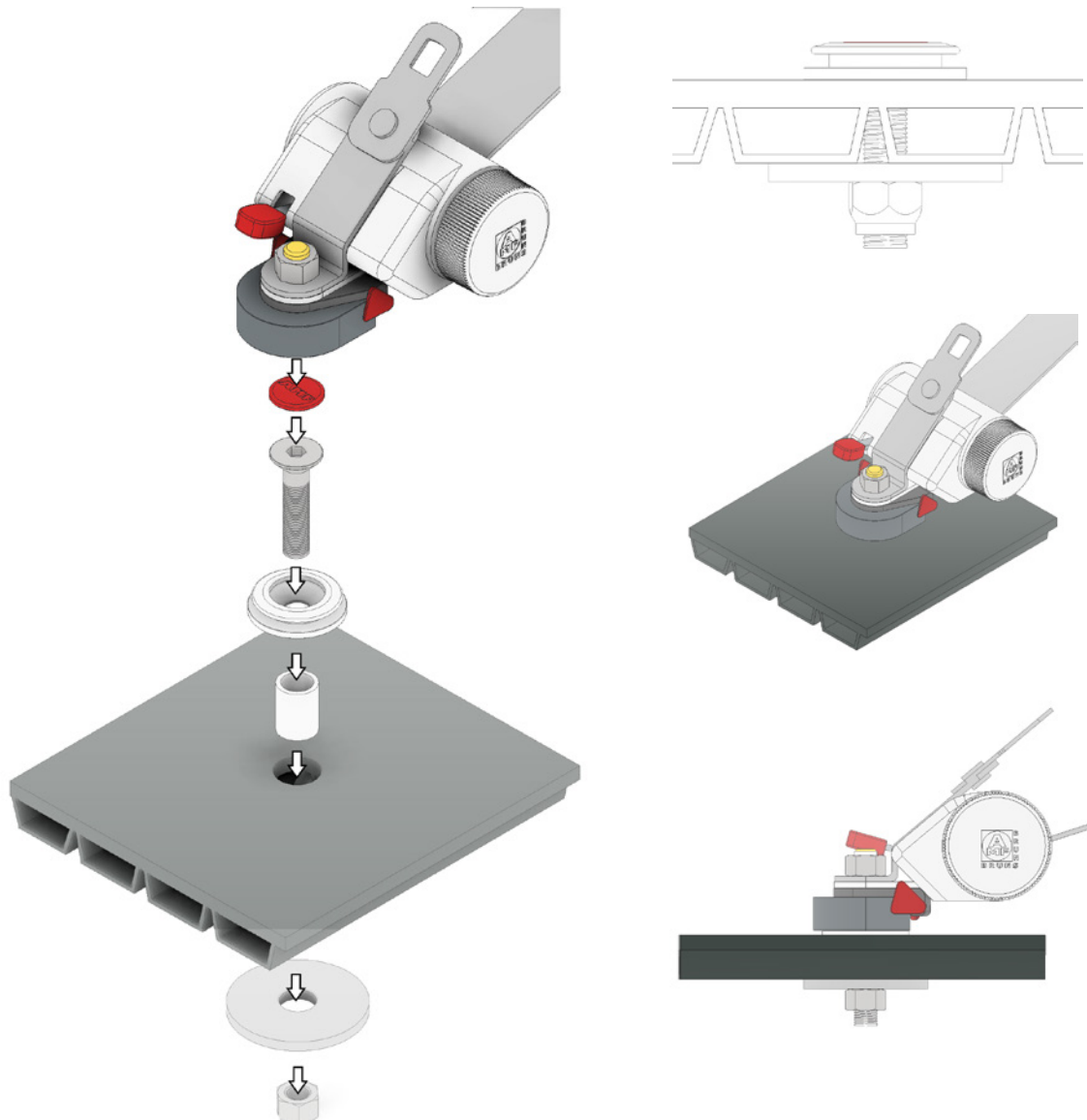


## NOTICE



These anchorage locations are not adjustable. These anchorages may not be suitable for use with different types of wheelchairs. Always check dimensions shown in Figure 3 to insure proper wheelchair securement.

Figure 6



## D. Floor Pocket Installation (See Figure 7 below)

1. Determine location of anchorages per Figures 3. Pockets can be installed perpendicular or parallel to wheelchair location.
2. Use pocket as a template to center mark hole to be drilled.
3. Remove pocket and drill 10.5mm hole through floor.



### WARNING



Damages to a fuel line, fuel tank or electrical line, even if apparently insignificant, could result in a fire or other malfunction, causing personal injury or death to the vehicle occupants.

4. Clean out debris and pass 10 mm bolt through pocket and floor.
5. From underneath vehicle floor, place washer over bolt. The washer should have dimensions of at least (inside diameter x outside diameter x thickness Ø 80 mm x 3 mm, (10.5mm x 80mm x 3mm thick). Sealant may be used between washer and floor if desired.
6. Securely fasten bolt and lock nut as shown in Figure 7, ensuring at least 2 – 3 threads are extending past the lock nut.

**Recommended torque** = 35 FT/LB (47 Nm)



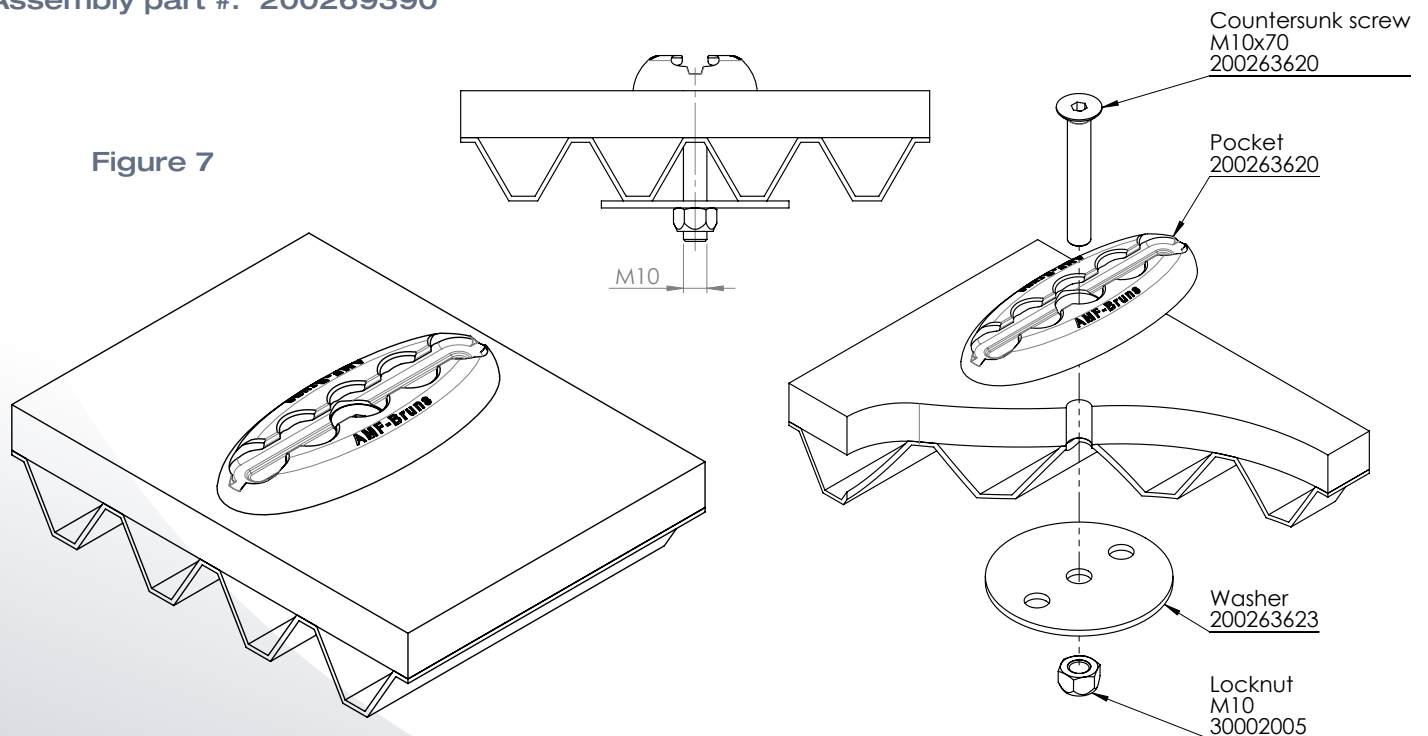
### NOTICE



These anchorage locations are not adjustable. These anchorages may not be suitable for use with different types of wheelchairs. Always check dimensions shown in Figure 3 to insure proper wheelchair securement.

**Assembly part #: 200269390**

**Figure 7**



## E. Smartfloor Installation (Figure 8)

The Smartfloor aluminum vehicle floor is composed of different aluminum profiles which are adhered to the floor base of the vehicle. Smartfloor meets and exceeds the requirements of all applicable standards. For further information, please visit our website at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).

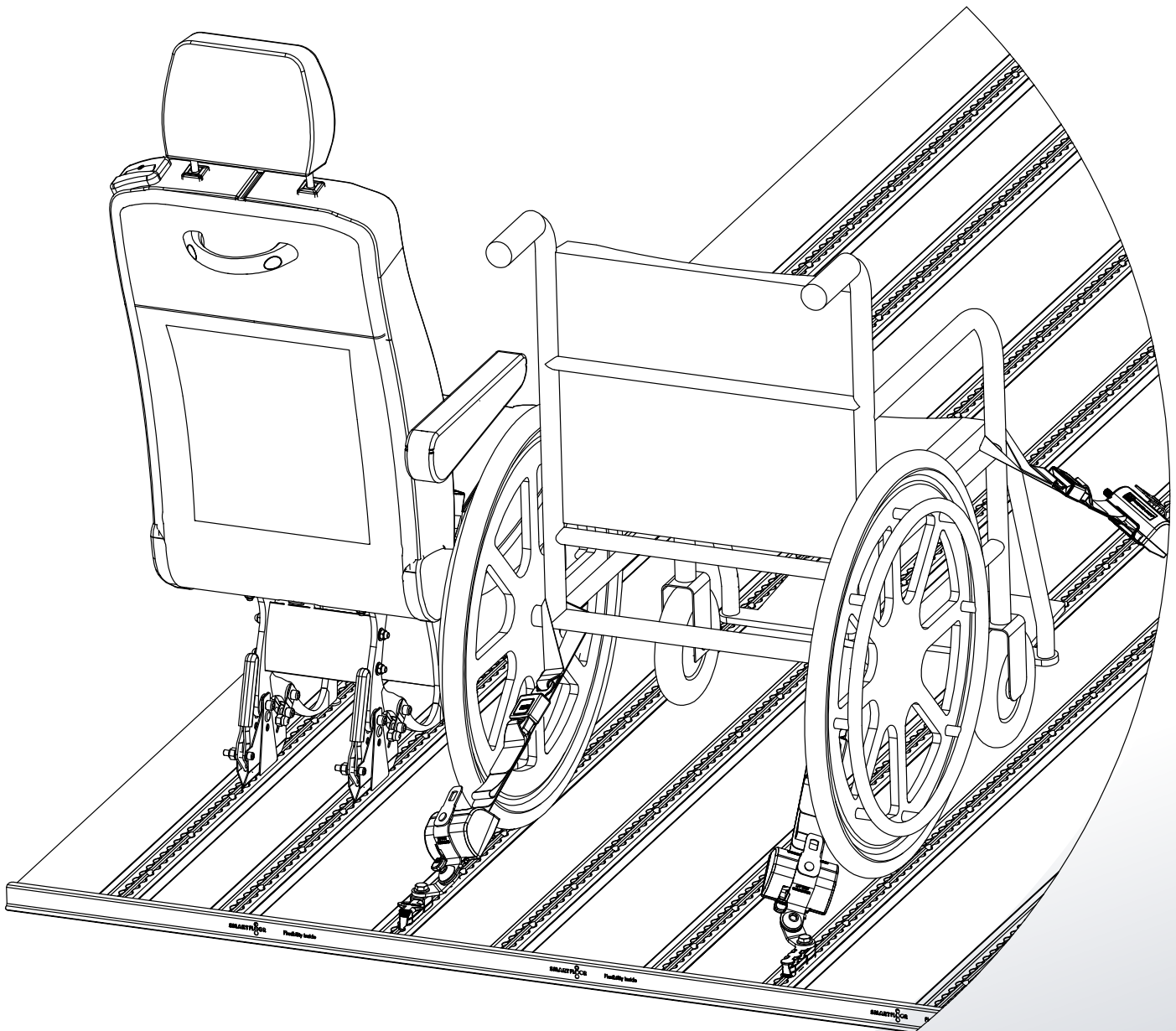


### NOTICE



When securing a wheelchair in a smart floor, determine locations of anchorages per Figures 3.

Smartfloor  
Figure 8

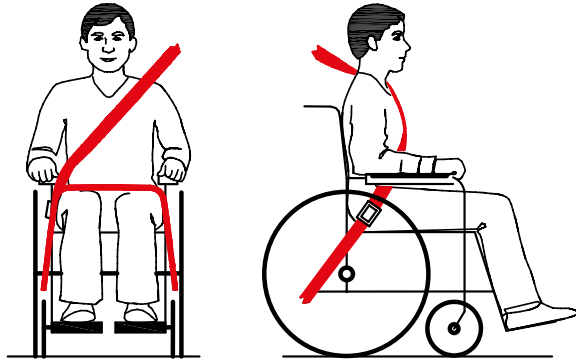




## VI. Shoulder Belt Anchorage Fixed Point Installation

AMF-Bruns of America provides several styles of shoulder belts for a variety of applications. This section describes the placement and installation instructions for fixed, retractable and combination shoulder belts.

Figure 9



**PELVIC BELT RESTRAINTS SHOULD MAKE SNUG CONTACT ACROSS THE FRONT OF THE BODY AND AT THE JUNCTION OF THE THIGH AND PELVIS.**



**RESTRAINTS SHOULD NOT BE HELD AWAY FROM BODY BY WHEELCHAIR COMPONENTS SUCH AS ARM RESTS OR WHEELS.**

### VI. A. Installation of Lower Retractable Shoulder Belt Anchorage

See Section III(B). Securing The Passenger (See Figure 9)

1. The installer is responsible for ensuring that anchorages are installed onto floor and wall structures. Always use sufficient reinforcement, such as mounting plates and washers, at all anchorage points. The vehicle floor and sidewall structures, where the system anchorages are attached, shall have greater strength than the system being installed. If you have any doubts, contact your dealer or AMF-Bruns of America.
2. Do not install anchorages or any system component into weak materials such as corroded, cracked or deformed metal or wood, or any plastic or fiberglass panels
3. Use only AMF-Bruns of America provided hardware. If you need additional hardware, contact AMF-Bruns of America at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).
4. Backing plate must sit flush against vehicle surface. Modifications to the backing plate must only be made when absolutely necessary, as smaller plate size reduces the floor load distribution. Always leave a minimum of 0.6" (15 mm) adjacent the bolt hole in the plate.

### VI. B. Mounting Directly to Floor

1. The installer is responsible for ensuring that anchorages are installed onto floor and wall structures. Always use sufficient reinforcement, such as mounting plates and washers, at all anchorage points. The vehicle floor and sidewall structures, where the system anchorages are attached, shall have greater strength than the system being installed. If you have any doubts, contact your dealer or AMF-Bruns of America.
2. Do not install anchorages or any system component into weak materials such as corroded, cracked or deformed metal or wood, or any plastic or fiberglass panels.



3. Use only AMF-Bruns of America provided hardware. If you need additional hardware, contact AMF-Bruns of America at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).
4. Determine mounting location of shoulder belt in wheelchair location (Figure 9). In general, lower anchorage point should be adjacent to or slightly behind rear floor anchorages.
5. Place retractor base in position and use as a template to center mark the hole to be drilled.



## WARNING



Damages to a fuel line, fuel tank or electrical line, even if apparently insignificant, could result in a fire or other malfunction, causing personal injury or death to the vehicle occupants.

6. Drill 15/32 hole through floor in center of L-bracket. Pass the bolt through L-bracket and floor. We recommend the use of a sealant between floor and bracket.
7. From underneath the vehicle floor, place the bushing over the bolt. Locate the backing plate over the bolt. Sealant may be used between backing plate and floor if desired.
8. Securely fasten the bolt as shown in Figure 10, ensuring at least 2 – 3 threads are extending past the backing plate.

**Recommended torque** = 35 FT/LB (47 Nm).

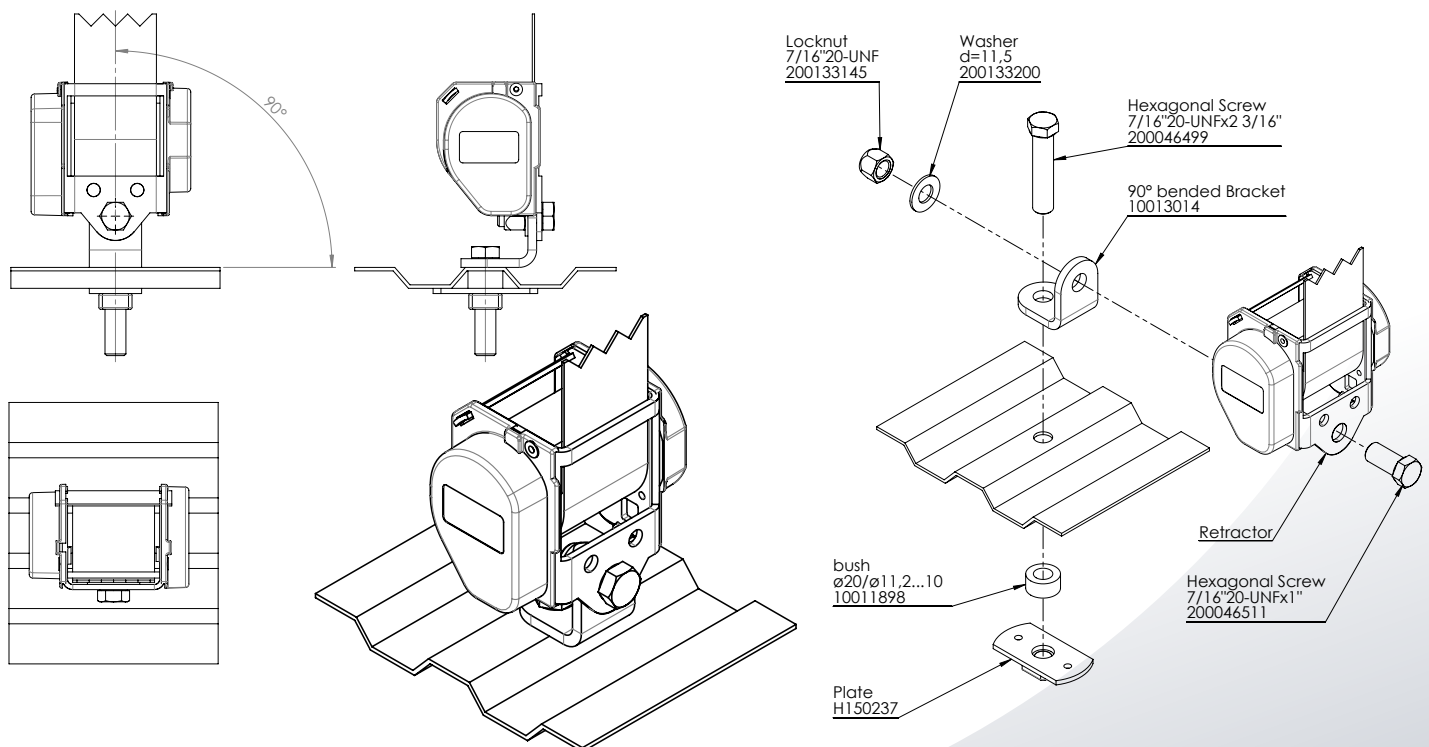


## NOTICE



These anchorage locations are not adjustable. These anchorages may not be suitable for use with different types of wheelchairs. Always check dimensions shown in Figure 3 to insure proper wheelchair securement. Please use AMF-Bruns of America's hardware. If you have to use other hardware, use only a minimum of Grade 8 nut and bolt with suitable corrosion protection.

**Figure 10**



## VI.C. Mounting Behind Vehicle Wall

1. The installer is responsible for ensuring that anchorages are installed onto floor and wall structures. Always use sufficient reinforcement, such as mounting plates and washers, at all anchorage points. The vehicle floor and sidewall structures, where the system anchorages are attached, shall have greater strength than the system being installed. If you have any doubts, contact your dealer or AMF-Bruns of America.
2. Do not install anchorages or any system component into weak materials such as corroded, cracked or deformed metal or wood, or any plastic or fiberglass panels
3. Use only AMF-Bruns of America provided hardware. If you need additional hardware, contact AMF-Bruns of America at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).

Fixed shoulder belt anchor points with retractor.

1. Determine mounting location of shoulder belt in Wheelchair location (Figure 9 - Page 16).  
In general, lower anchorage point should be adjacent to or slightly behind rear floor anchorages.
2. Place retractor base in position, and use as a template to center mark hole to be drilled.



### WARNING



Damages to a fuel line, fuel tank or electrical line, even if apparently insignificant, could result in a fire or other malfunction, causing personal injury or death to the vehicle occupants.

3. Drill 15/32 hole through floor in center of L-bracket, and pass bolt through L-bracket and floor.  
We recommend the use of a sealant between floor and bracket.
4. Place the washer over the bolt. Sealant may be used between washer and floor if desired.
5. Securely fasten the lock nut as shown in Figure 11 (Page 19), ensuring at least 2 – 3 threads are extended past the backing plate. **Recommended torque** = 35 FT/LB (47 Nm).
6. For further information please visit our website at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).



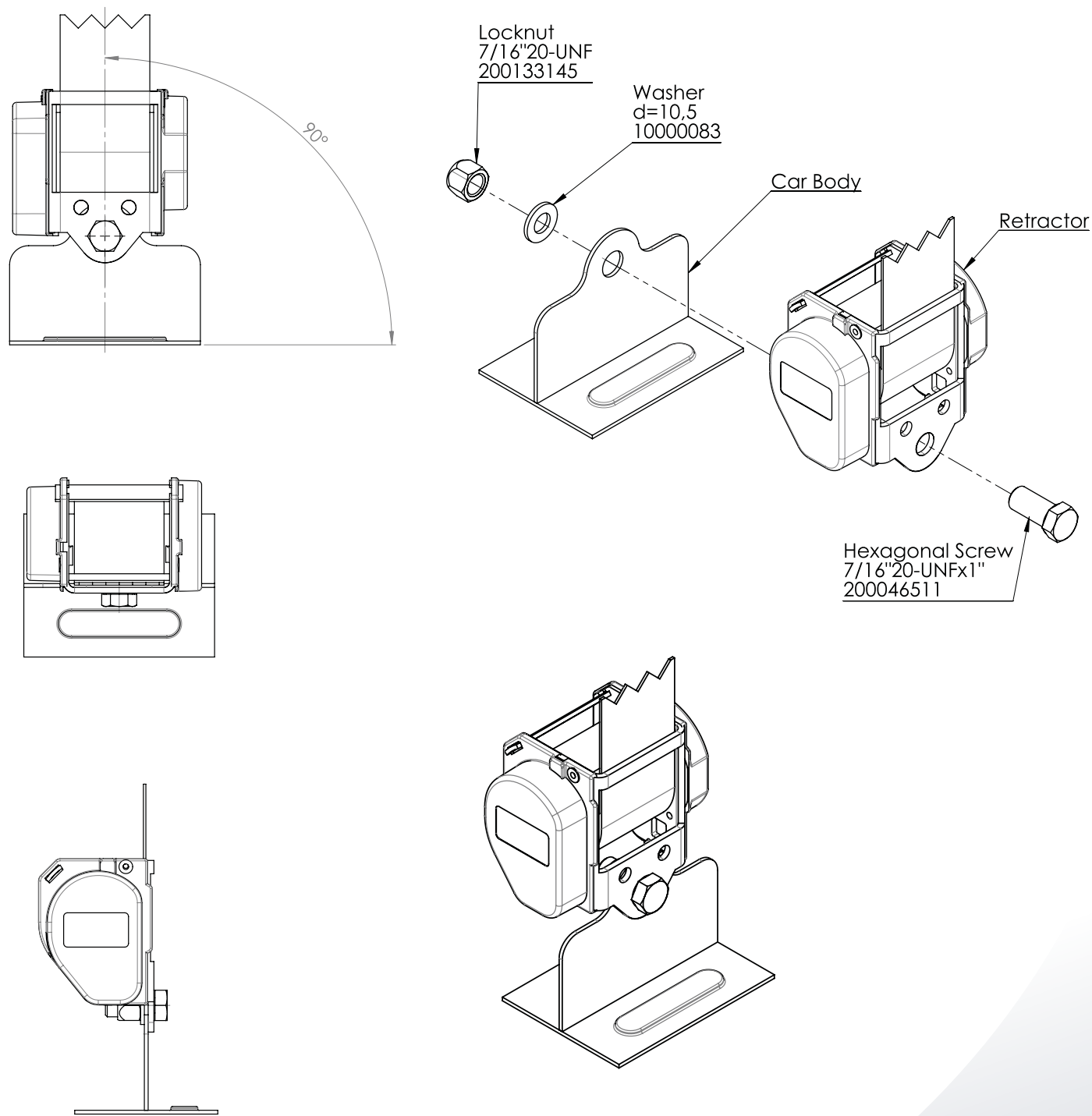
### NOTICE



These anchorage locations are not adjustable. These anchorages may not be suitable for use with different types of wheelchairs. Always check dimensions shown in Figure 3 to insure proper wheelchair securement.

Behind Vehicle Wall Installation:

Figure 11



## VI. D. Mounting to Fittings

(Surface or Insert L-Track or Smartfloor aluminum vehicle floor)

1. The installer is responsible for ensuring that anchorages are installed onto floor and wall structures.  
Always use sufficient reinforcement, such as mounting plates and washers, at all anchorage points. The vehicle floor and sidewall structures, where the system anchorages are attached, shall have greater strength than the system being installed. If you have any doubts, contact your dealer or AMF-Bruns of America.
2. Do not install anchorages or any system component into weak materials such as corroded, cracked or deformed metal or wood, or any plastic or fiberglass panels
3. Use only AMF-Bruns of America provided hardware. If you need additional hardware, contact AMF-Bruns of America at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).
4. Determine mounting location of shoulder belt in wheelchair location (Figure 9); in general, lower anchorage point should be adjacent to or slightly behind rear floor anchorages.
5. Install the appropriate floor anchorage per 'Floor Anchorage Instructions' section.
6. Fasten retractor base to applicable fitting using bracket and hardware as shown in Figure 12.  
**Recommended torque** = 50 FT/LB (67 Nm).
7. Secure shoulder belt and fitting assembly into appropriate floor anchorage.



### DANGER



Retractor **MUST** be installed at zero (0) degree rotation with respect to the bracket arm to ensure proper operation. This retractor operates with a motion sensor locking mechanism. Always pull webbing slowly and steadily out of the housing while always keeping the retractor at zero degrees.

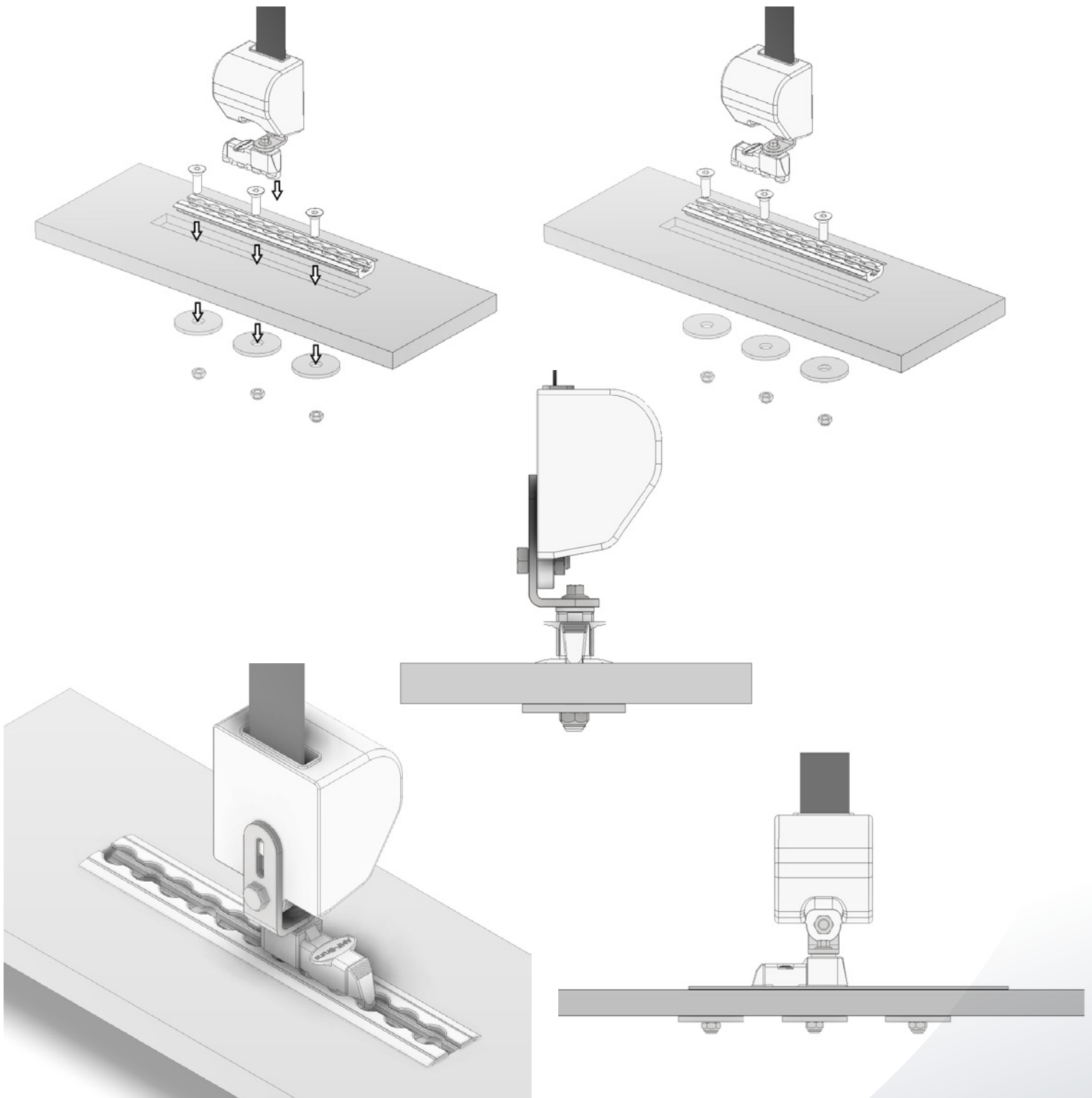


### NOTICE



These anchorage locations are not adjustable. These anchorages may not be suitable for use with different wheelchairs. Always check dimensions shown in Figure 3 to insure proper wheelchair securement.

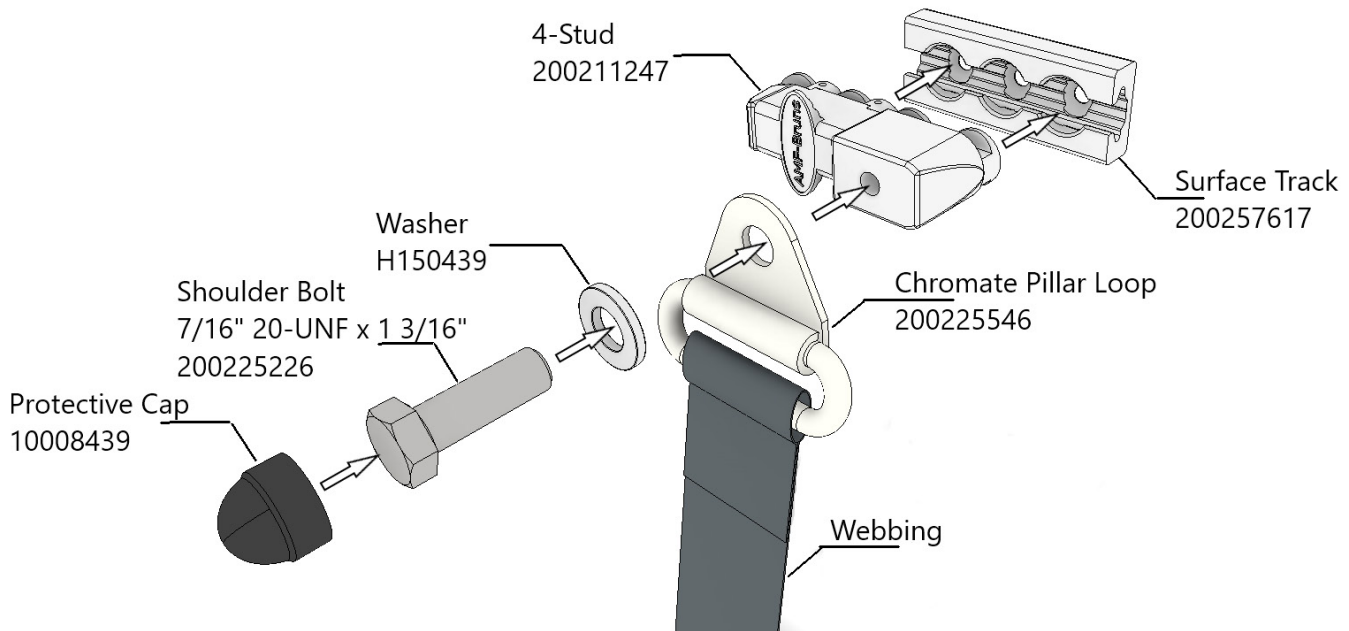
Figure 12



## VII. Installation of Upper Anchorage Points

See Section III(B). Securing The Passenger (See Figure 9)

Figure 14



### VII. A. Mounting Directly to Wall (i.e. Fixed Shoulder Belt)

1. The installer is responsible for ensuring that anchorages are installed onto floor and wall structures. Always use sufficient reinforcement, such as mounting plates and washers, at all anchorage points. The vehicle floor and sidewall structures, where the system anchorages are attached, shall have greater strength than the system being installed. If you have any doubts, contact your dealer or AMF-Bruns of America.
2. Do not install anchorages or any system component into weak materials such as corroded, cracked or deformed metal or wood, or any plastic or fiberglass panels.
3. Use only AMF-Bruns of America provided hardware. If you need additional hardware, contact AMF-Bruns of America at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).
4. Determine mounting location for shoulder belt in wheelchair location (Figure 9); in general, shoulder belt anchorage point should be adjacent to or slightly behind rear floor anchorages.
5. For retractable shoulder belts, verify anchorage is directly above the lower anchorage (i.e. straight vertical line) to prevent webbing from rubbing on the cover as it exits the retractor base.
6. Measure and determine proper mounting height of upper anchorage based on style of shoulder belt:
  - a. With height adjustor: Mount upper anchorage 61" (1,550 mm) or more from the floor.
  - b. Without height adjustor: Mount upper anchorage 46" – 48" (1,170 – 1,220 mm) from the floor.
7. Mounts must be installed into frame component of panel wall.
8. Securely fasten the lock nut (Figure 13), ensuring at least 2-3 threads are extending past the backing plate.



## NOTICE



A series of in-line rivets or screws usually indicate the location of frame members of the wall structure.



## NOTICE



These anchorage locations are not adjustable. These anchorages may not be suitable for use with different wheelchairs. Always check dimensions shown in Figure 3 to insure proper wheelchair securement.

## VII. B. Installation of Shoulder Belt Anchorage Rail for Variable Point

This can only be installed in combination with the Smartfloor aluminum vehicle floor. For fitting instructions of a variable rail, please visit our website at [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com).

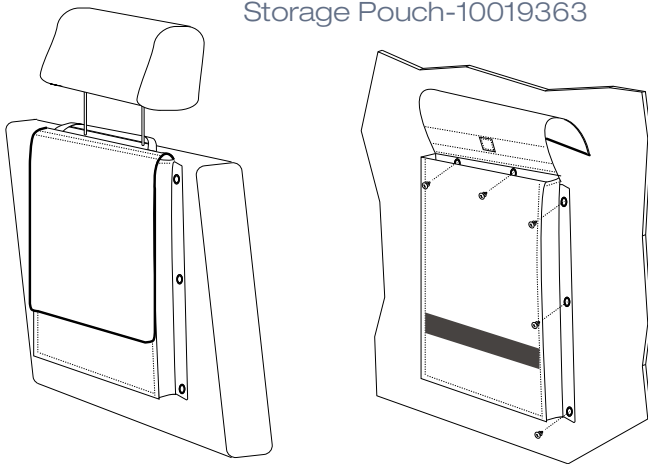
## VIII. Storage Box / Storage Pouch

1. Select a structurally sound area of the vehicle (i.e. wall or under a flip-seat) to install the storage box or storage pouch. We recommend placing the storage box or storage pouch near wheelchair locations for ease of access.
2. Fasten pouch using screws through each eyelet (Figure 15 right). We recommend 1/4" (6.5 mm) screws and serrated washers (Grade 8).
3. Alternatively, the wall pouch can be attached to the headrest of a seat in the vehicle (Figure 15 left).

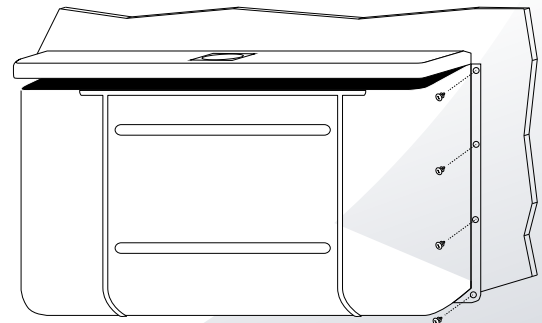
**Note: Do not overload pouch.**

**It is designed to hold 1 wheelchair restraint (4 retractors), 1 lap belt and 1 shoulder belt.**

**Figure 15**  
Storage Pouch-10019363



**Figure 16**  
Storage box



# AMF-Bruns

## Global Locations

### North America

AMF Bruns America  
1797 Georgetown Road  
Hudson · OH 44236  
Phone: 1 877-506-3770  
EM: [info@amfbrunsamerica.com](mailto:info@amfbrunsamerica.com)  
WEB: [www.amfbrunsamerica.com](http://www.amfbrunsamerica.com)

### Germany / Europe

AMF-Bruns GmbH & Co. KG  
Hauptstraße 101  
D-26689 Apen  
Phone: +49 44 89 72 71 01  
EM: [hubmatik@amf-bruns.de](mailto:hubmatik@amf-bruns.de)  
WEB: [www.amf-bruns.de](http://www.amf-bruns.de)

### Asia

Smartfloor Seating (Thailand) Co.  
Kunwang Place 165/86  
T.: Sanprapao A.: Sansai  
Chiang Mai 50210 Thailand  
Phone: +66 81 381 5207  
EM: [info@samrtfloor.nl](mailto:info@samrtfloor.nl)

### Middle East & North Africa

AMF-Bruns MENA  
Bisco FZCO · Silicon Oasis  
LIU4 Units C8 & C9 · Dubai  
Phone +971 4 3207123  
EM: [mena-office@amf-bruns.ae](mailto:mena-office@amf-bruns.ae)  
WEB: [www.amf-bruns.ae](http://www.amf-bruns.ae)

### South Africa

AMF-Bruns South Africa  
Shoprider  
92 Jakaranda Street  
Unit # 13 Diamond Park  
Hennospark · CENTURION  
Phone +27 12 653 1168  
EM: [info@amf-bruns.co.za](mailto:info@amf-bruns.co.za)  
WEB: [www.amf-bruns.co.za](http://www.amf-bruns.co.za)

### United Kingdom

AMF-Bruns UK LTD  
Unit 3, Parkway Four  
Longbridge Road  
Trafford Park  
Manchester · M17 1SW  
Phone: +44 161 872 7951  
EM: [hubmatik@amf-bruns.de](mailto:hubmatik@amf-bruns.de)  
WEB: [www.amf-bruns.com](http://www.amf-bruns.com)

### Netherlands, Belgium and Luxembourg

SMARTFLOOR B.V.  
Bedrijvenpark Twente 415  
7602 KM Almelo  
Nederland  
Phone: +31 546 45 55 65  
EM: [info@smartfloor.nl](mailto:info@smartfloor.nl)  
WEB: [www.smartfloor.nl](http://www.smartfloor.nl)

**The Global Leader In Wheelchair  
Securement and Occupant Restraints  
Since 1958.**



**AMF Bruns America**

[www.amfbrunsamerica.com](http://www.amfbrunsamerica.com)  
877-506-3770

