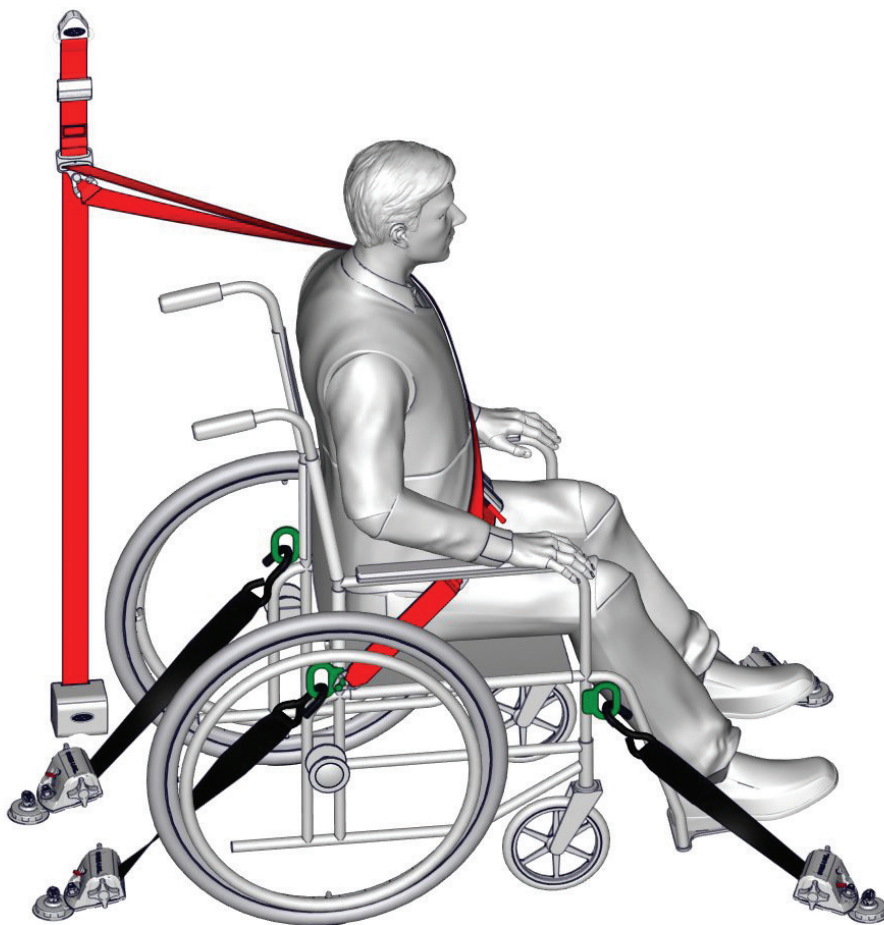


# Installation Manual

VEHICLE ANCHORAGES & ACCESSORIES FOR

# TITAN800

4-POINT WHEELCHAIR SECUREMENT SYSTEM



## SURE-LOK<sup>®</sup>

Safe and Secure

THE TITAN 800 4-POINT WHEELCHAIR SECUREMENT SYSTEM AND COMPONENTS COMPLIES WITH ALL APPLICABLE REQUIREMENTS OF SAFETY REGULATIONS AND STANDARDS INCLUDING: ADA, FMVSS & CMVSS 209/210/222/302, CSA Z605 & D409, AS-2942-1994, SAE J2249 and ANSI/RESNA WC-4 SECTION 18.





Safe and Secure

# TITAN800

## 4-POINT WHEELCHAIR SECUREMENT SYSTEM

### TABLE OF CONTENTS

READ ALL INSTRUCTIONS PRIOR TO INSTALLATION .....	3	INSTALLATION INSTRUCTIONS .....	10
IMPORTANT SAFEGUARDS AND WARNINGS.....	4	SLIDE 'N CLICK ANCHORAGE INSTALLATION .....	11-13
INTRODUCTION .....	5	L-TRACK ANCHORAGE AND END CAPS INSTALLATION.....	14-17
COMPLIANCE .....	5	L-TRACK COVER INSTALLATION .....	18
SYSTEM CHECKLIST .....	5	WALL POUCH INSTALLATION .....	19
EQUIPMENT AND PART NUMBERS .....	6	TESTING THE TITAN 800 SYSTEM.....	20-21
DIMENSIONS .....	7	TROUBLESHOOTING .....	22-23
LAYOUT RECOMMENDATIONS.....	8	MAINTENANCE AND CARE .....	24
SYSTEM DEFINITIONS .....	9		

**STOP**

### Read All Instructions Prior to Installation

- This manual is a comprehensive step-by-step instruction guide on how to install the floor anchorages and wall pouch—for the Titan 800 4-Point Wheelchair Securement System and components onto vehicles' walls and floors.
- Make sure to read, understand and follow all these instructions.
- To address any questions relating to installation, ordering parts, operating the 4-Point Wheelchair Securement System, troubleshooting, maintenance, service or anything else, contact the Sure-Lok® office listed on the back page of this manual.
- All deviations and alterations from these instructions **MUST** be reported to both your supervisor and Sure-Lok®.



## IMPORTANT SAFEGUARDS AND WARNINGS

- All equipment and components **MUST** be installed and serviced by an experienced and trained technician.
- Safety eye glasses **MUST** be worn whenever installing or servicing this system.
- Wheelchairs are not intended to be used as seats in motor vehicles unless compliant with ANSI/RESNA WC-4, Section 19.
- This system **MUST** only be used with wheelchairs in forward facing applications and cannot be altered or modified in any way.
- The Titan 800 4-Point Wheelchair Securement System is a complete integrated system, do not alter or modify it in any way and do not interchange or substitute any components. Any deviation from these recommendations is the responsibility of the installer.
- Before installation, inspect the underside of vehicle floor, note utilities, frames, cross-members, fuel tanks and other possible obstructions—any questions contact the vehicle OEM.
- **Vehicle anchor points may require reinforcement.** The installer or manufacturer is responsible for ensuring anchorages are installed into suitable floor structures. Floor strength **MUST** meet specific regulations, standards and applicable performance requirements from local transportation authorities.
- Please **CONTACT** Sure-Lok® in the event that the vehicle's dimensions are outside the recommended installation instructions.
- Do **NOT** install anchorages or any system components into faulty materials such as corroded metal, wood, plastic or fiberglass panels.
- Modifications to Backing Plate **MUST** only be made where necessary as a smaller plate size reduces the floor load distribution. Always leave a minimum of .6" (15mm) adjacent the bolt hole in the plate.
- The floor and shoulder belt anchorages **MUST** be installed onto a flat and durable surface.
- **Only use Hardware** with a minimum Grade 8, which meets ASTM F835, SAE J429 or ASTM 574 specifications (depending on head style and drive), and coated for adequate protection against corrosion per ISO 7253 or ASTM B117 or per customer requirements.
- **Only use Sure-Lok® components** with this system, unless otherwise stated.
- Regulations and standards in some countries require the installation of a shoulder and pelvic belt to be considered a compliant wheelchair securement system. **This 4-Point Wheelchair Securement System plus compliant shoulder and pelvic belt (occupant restraint) make a complete wheelchair securement system.**
- This system is a complete integrated system, do not alter or modify it in any way and do not interchange or substitute any components. Any deviation from these recommendations is the responsibility of the installer.
- If a head restraint is anchored to the vehicle, a vehicle anchored back restraint **MUST** be provided to minimize rearward deflection of the wheelchair seatback and therefore prevent injury.
- Installer is responsible for making sure the installed 4-Point Wheelchair Securement System meets all applicable regulations and standards—and that the system works according to the instructions in the section of this manual called Testing the Titan 800 System.
- **Tie-Down Hooks** must be attached to the WC-19 compliant chair securement points or a solid wheelchair frame for all other wheelchairs (no spokes, wheels or movable components) at an approximate 45 degree angle with floor.
- **DO NOT allow webbing to get twisted inside the retractors or come in contact with sharp corners and edges.**
- **Compliant Shoulder and Pelvic Belt Restraint** must go across occupant's shoulder and pelvis (lap), and not be worn twisted or held away from the occupant's body by wheelchair components. We recommend using both a pelvic and shoulder belt together and not individually since it will compromise the performance of the system.
- The Titan 800 4-Point Wheelchair Securement System, components and anchorages have been tested in a configuration similar to the recommendations in this manual.
- This 4-Point Wheelchair Securement System and its components **MUST** be regularly inspected, cleaned and maintained—reference the Maintenance and Care section in this manual.
- The Titan 800 4-Point Wheelchair Securement System should not be operated by anyone who does not have full comprehension of how the system works or if the system is not working properly.
- **The 4-Point Wheelchair Securement System and all system components including floor and wall anchorages MUST be replaced after a vehicle collision.**
- Broken and worn components **MUST** be replaced.
- All damages and defects **MUST** be reported to supervisor and Sure-Lok®.
- The airbag **MUST** be disconnected if the wheelchair occupant is positioned less than 7" (177.8mm) from the airbag unit, or if an aftermarket device is installed to block the deployment of the airbag.
- **Keep loose articles of clothing away from retractors.**

**SAVE THESE INSTRUCTIONS**

# INTRODUCTION

## ENGINEERED TO PERFORM

Coming up with everyday solutions for transportation applications by going beyond current safety standards, has allowed us to meet tomorrow's industry regulations today. As a result the Titan 800 retractors are stronger with innovative energy distribution design for maximum load capacity.

## BUILT TO LAST

One-handed hook-up of wheelchairs has never been easier than with the Titan 800 energy-absorbing steel frame retractors which automatically self-tension and lock. The webbing strength has been designed to withstand the test of time—while the J-hooks reduce the twisting of belts to ensure proper securement with a quarter turn to accommodate virtually any wheelchair. The one-touch foot release lever makes releasing the retractors easier than ever with no bending down.

## SECURED ON THE ROAD

Developing and improving wheelchair and occupant safety is our main priority and one that keeps us involved in all major international safety committees. Keeping that in mind, this 4-point wheelchair securement system has been independently crash tested at a world renowned test facility to meet and exceed all applicable requirements.

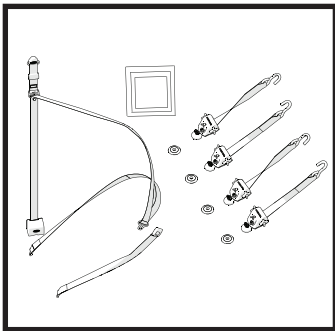
# COMPLIANCE

- The Titan 800 4-Point Securement System and components comply with all applicable requirements of safety regulations and standards including ADA, FMVSS & CMVSS 209/210/222/302, CSA Z605 & D409, AS-2942-1994, SAE J2249 and ANSI/RESNA WC-4 SECTION 18.
  - Systems are dynamically crash tested at 30mph (48kph), 20g, using a 187 lbs. (85kg) forward facing surrogate wheelchair and a 168 lbs. (76kg) Anthropomorphic Test Dummy (ATD). The ATD is restrained by both shoulder and pelvic belt restraints.



# SYSTEM CHECKLIST

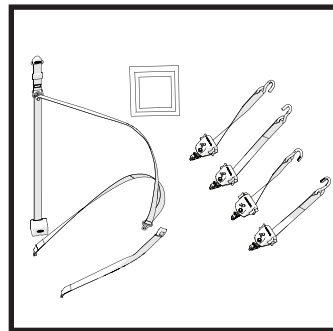
The following parts make up a complete Titan 800 4-Point Wheelchair Securement System. If any questions arise, call your nearest Sure-Lok® authorized dealer or office.



### Titan 800 System with Slide 'n Click Anchorage

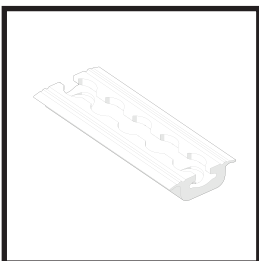
- ☐ 4 Titan 800 Assembled with Slide 'n Click
- ☐ 4 Slide 'n Click Anchorages
- ☐ 1 Occupant Securement (Shoulder and Lap Belt)
- ☐ 1 Titan 800 Installation Manual
- ☐ 1 Titan 800 Placard
- ☐ 1 Titan 800 Use and Care Manual

OR



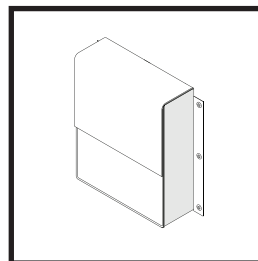
### Titan 800 System with PLI

- ☐ 4 Titan 800 Assembled with PLI
- ☐ 1 Occupant Securement (Shoulder and Lap Belt)
- ☐ 1 Titan 800 Installation Manual
- ☐ 1 Titan 800 Placard
- ☐ 1 Titan 800 Use and Care Manual



### The Titan 800 System can be installed with L-Track Anchorages

- ☐ L-Track (Different ones to choose from)
- ☐ L-Track Anchorage Hardware

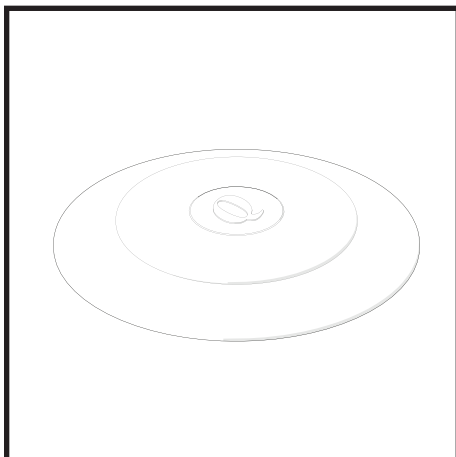


### Wall Pouch (optional)

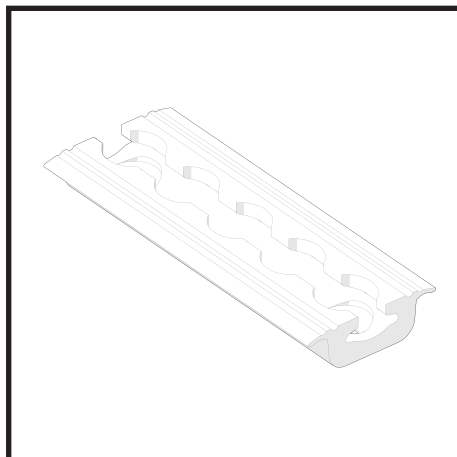
- ☐ Sure-Lok® Wall Pouch

## EQUIPMENT AND PART NUMBERS

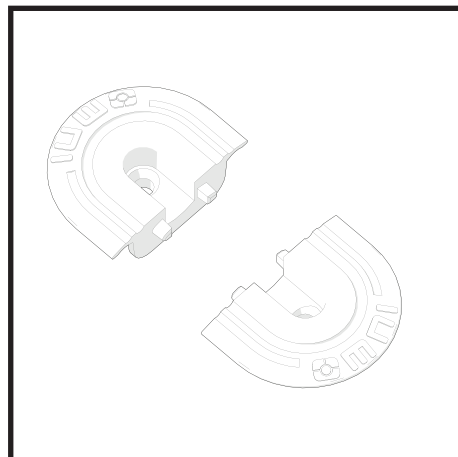
Order Parts by contacting the nearest Sure-Lok® authorized dealer or office.



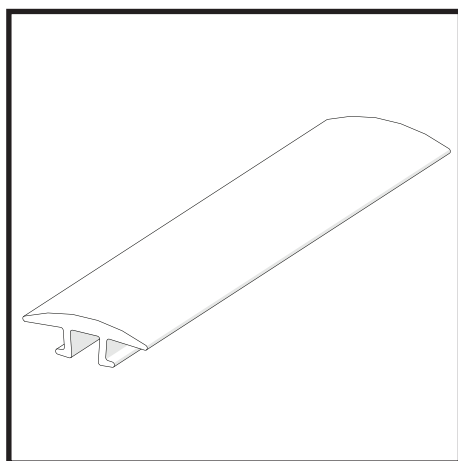
**Slide'n Click Anchorage**  
(Part # Q8-7580-A)



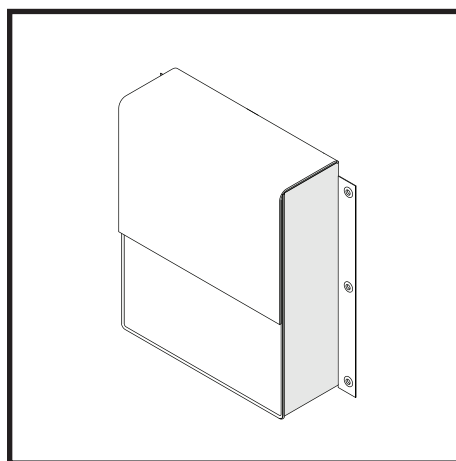
**L-Track Anchorage**  
(Depending on Length)



**L-Track End Caps**  
(Part # QC06058)

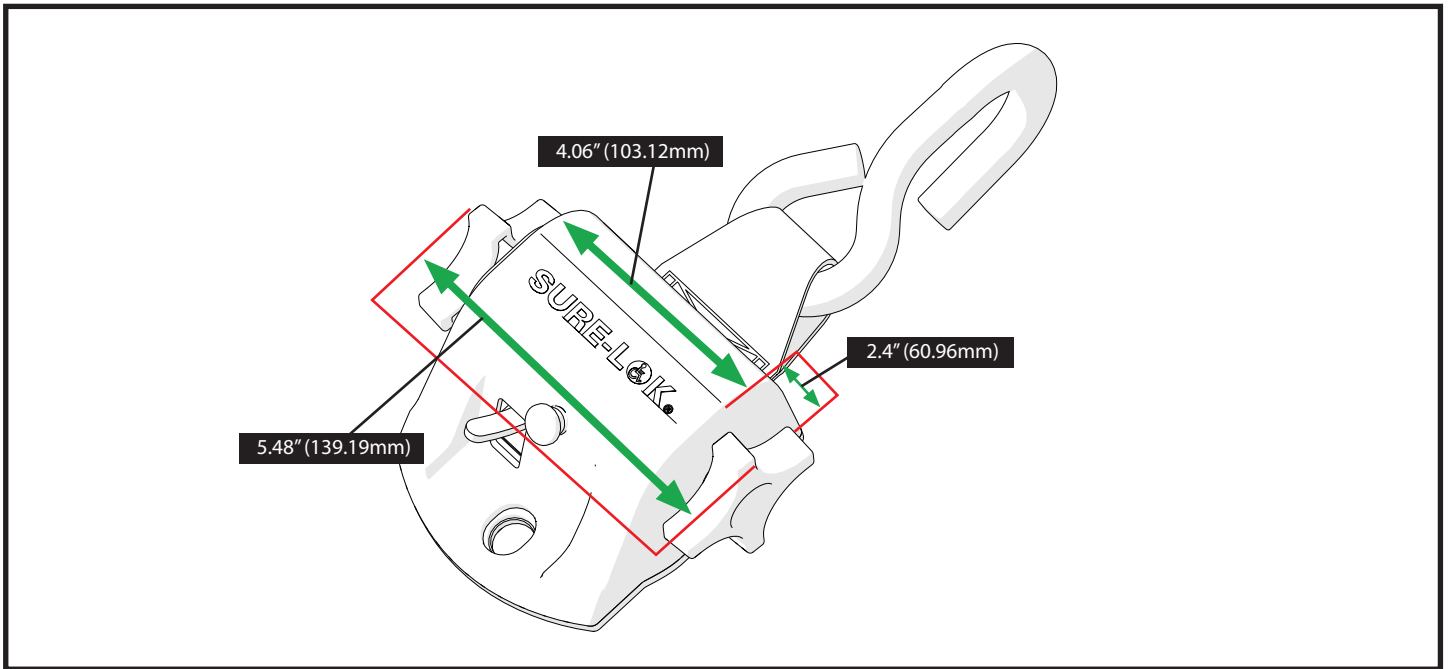


**L-Track Cover**  
(Part # FE200751)

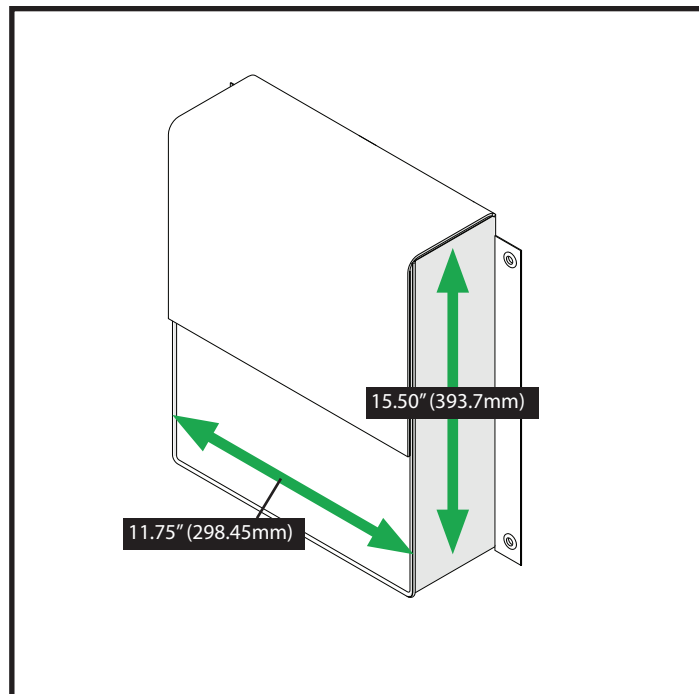


**Sure-Lok® Wall Pouch**  
(Part # FE201145)

## DIMENSIONS

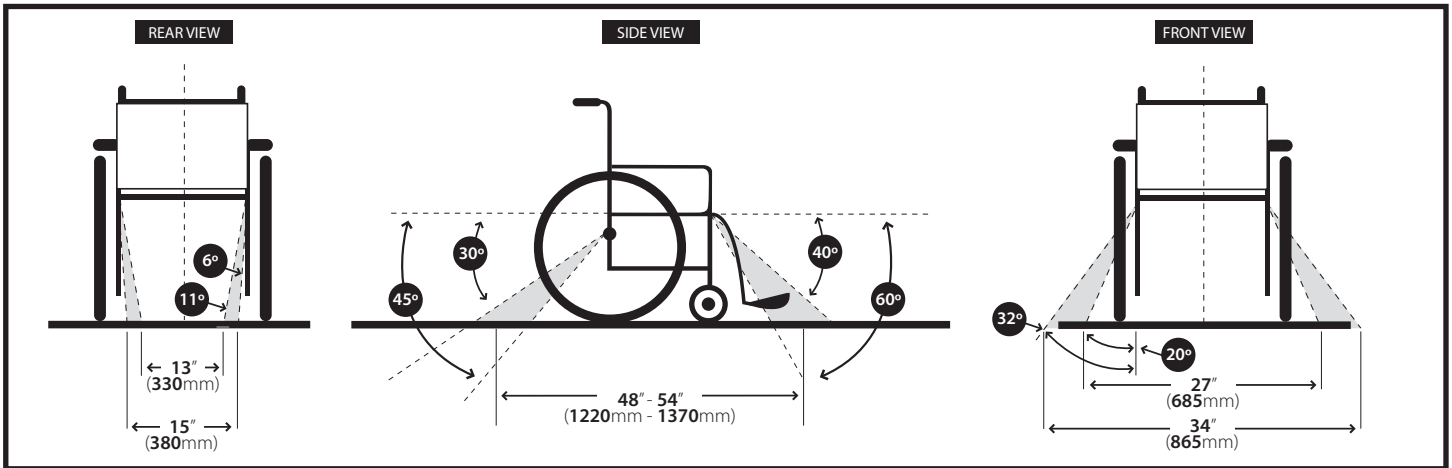


**Titan 800 Retractor**

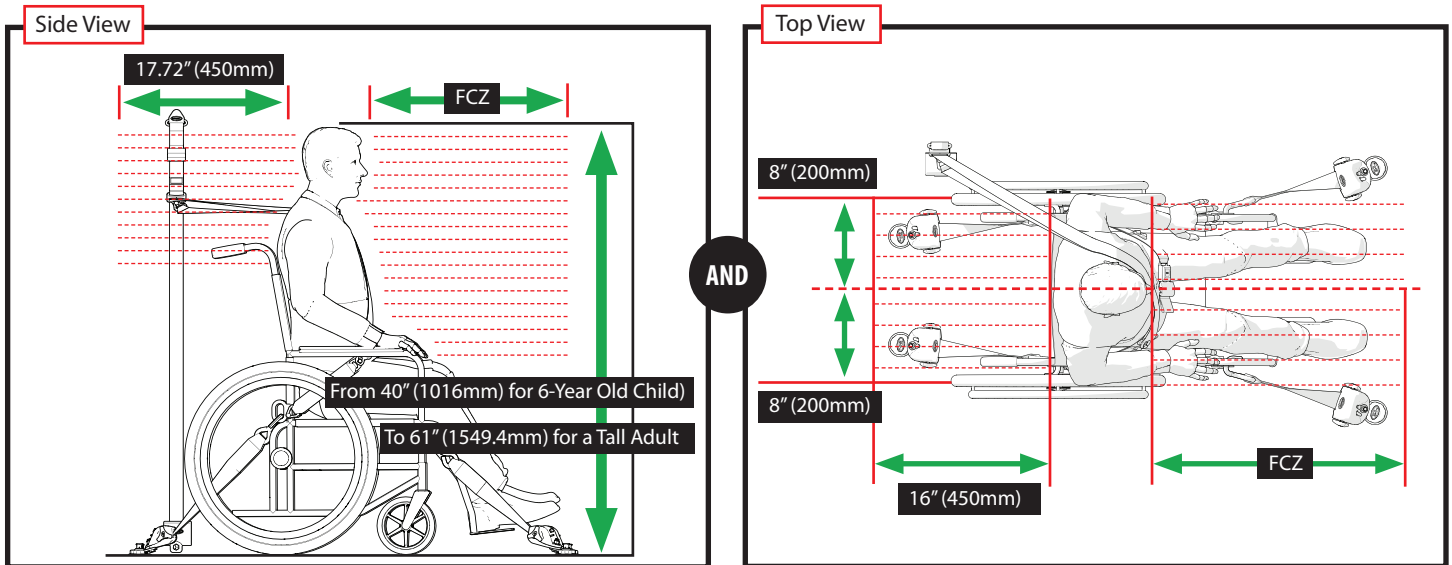


**Sure-Lok® Wall Pouch**

## LAYOUT RECOMMENDATIONS



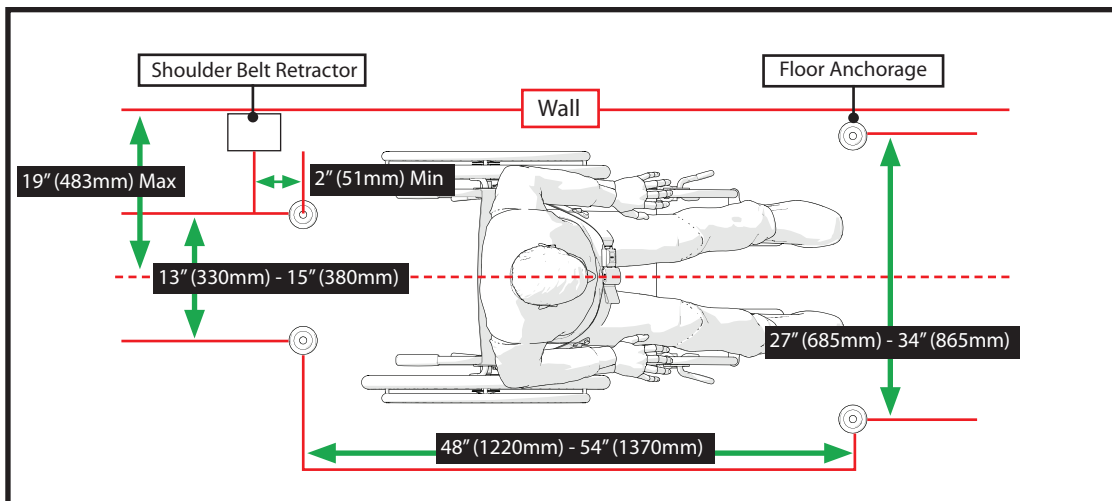
Please **CONTACT** Sure-Lok® in the event that the vehicle's dimensions are outside the recommended installation instructions.



### Frontal Clear Zones (FCZ) = 26" (660mm) with Shoulder Belt



We recommend using Shoulder and Lap Belts to reduce the possibility of head and chest impacts with vehicle components. FCZ may not be achievable with wheelchair-seated drivers.

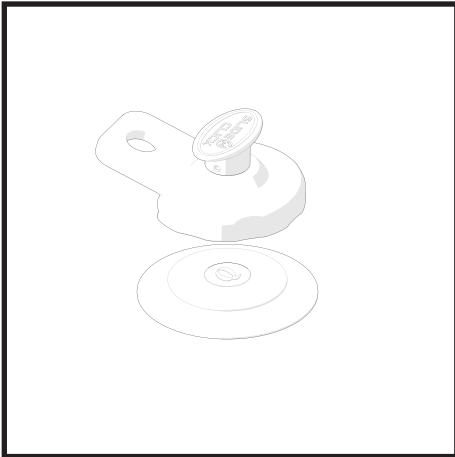


Layout for All Anchorages

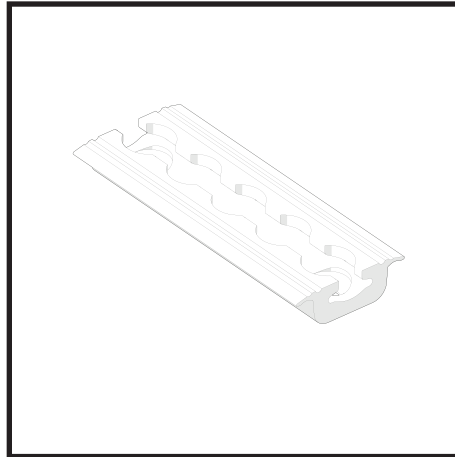


# SYSTEM DEFINITIONS

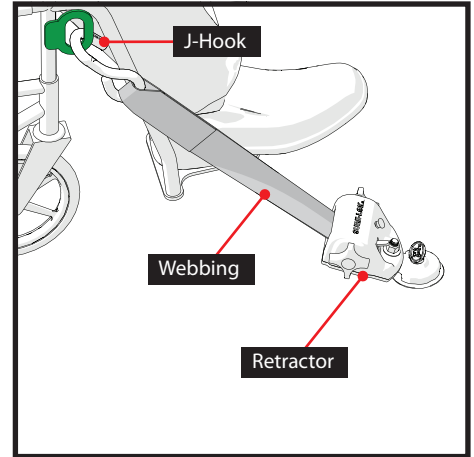
## 2 Different Floor Anchorages



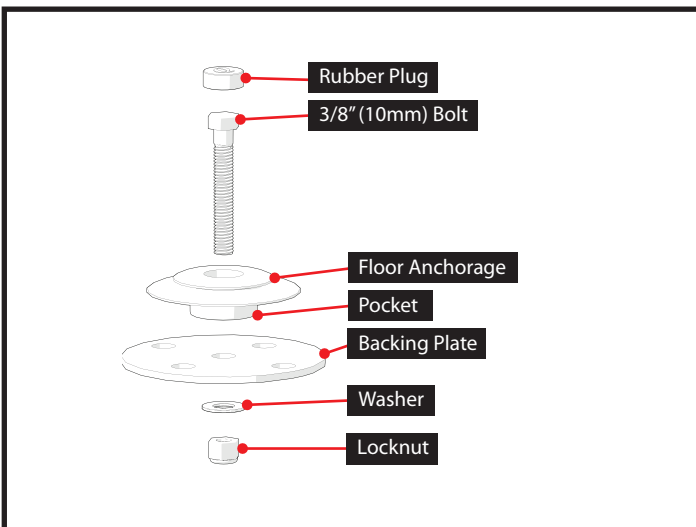
Slide'n Click



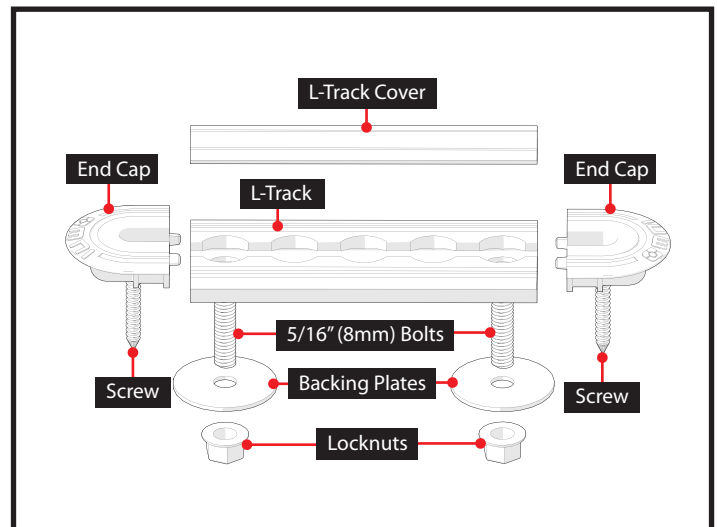
L-Track



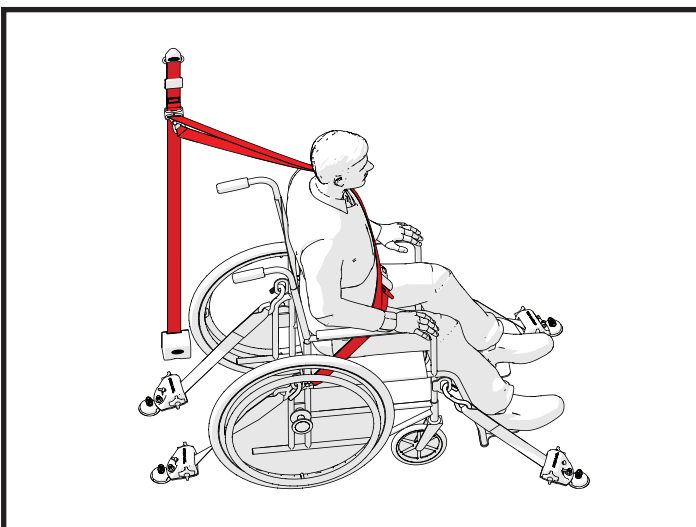
Titan 800 Retractor



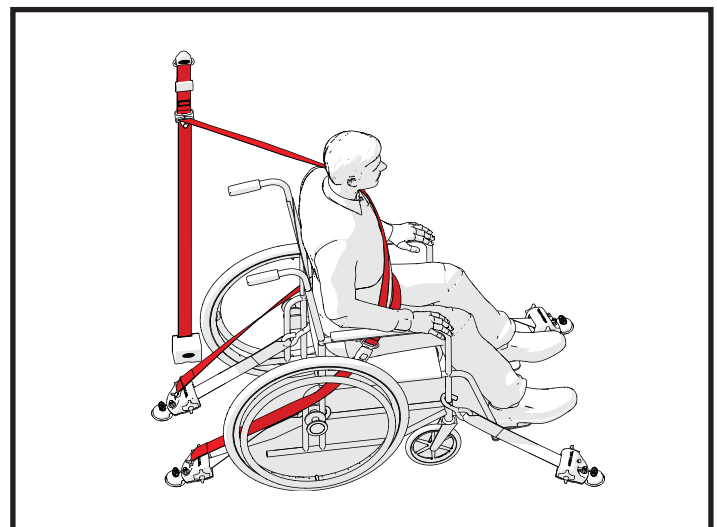
Slide'n Click Anchorage



L-Track Anchorage



WC19 Shoulder and Pelvic Belt Restraint



Non WC19 Shoulder and Pelvic Restraint

## INSTALLATION INSTRUCTIONS

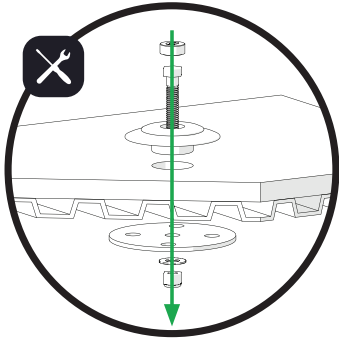


### INSTALLATION CHECKLIST

- ☐ Safety eye glasses **MUST** be worn whenever installing or servicing this system.
- ☐ Before installation, inspect the underside of vehicle floor, note utilities, frames, cross-members, fuel tanks and other possible obstructions—any questions contact the vehicle OEM.
- ☐ **Vehicle anchor points may require reinforcement.** The installer or manufacturer is responsible for ensuring anchorages are installed into suitable floor structures. Floor strength **MUST** meet specific regulations, standards and applicable performance requirements from local transportation authorities.
- ☐ Do **NOT** install anchorages or any system components into faulty materials such as corroded metal, wood, plastic or fiberglass panels.
- ☐ The floor and shoulder belt anchorages **MUST** be installed onto a flat and durable surface.
- ☐ **Only use Hardware** with a minimum Grade 8, which meets ASTM F835, SAE J429 or ASTM 574 specifications (depending on head style and drive), and coated for adequate protection against corrosion per ISO 7253 or ASTM B117 or per customer requirements.
- ☐ Modifications to Backing Plate **MUST** only be made where necessary as a smaller plate size reduces the floor load distribution. Always leave a minimum of .6" (15mm) adjacent the bolt hole in the plate.



## SLIDE 'N CLICK ANCHORAGE INSTALLATION

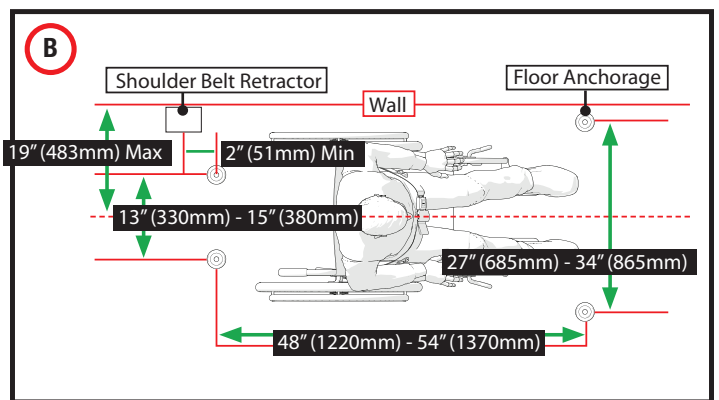
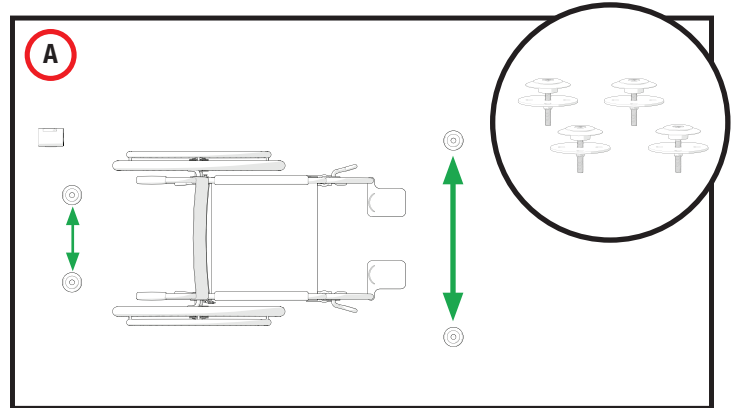


**Slide 'n Click Anchorage Installation Sequence**

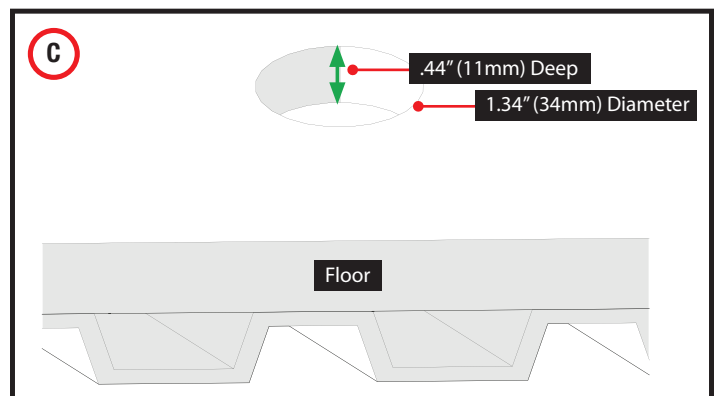
1. Choose and mark location for installing the Slide 'n Click Floor Anchorages (A).



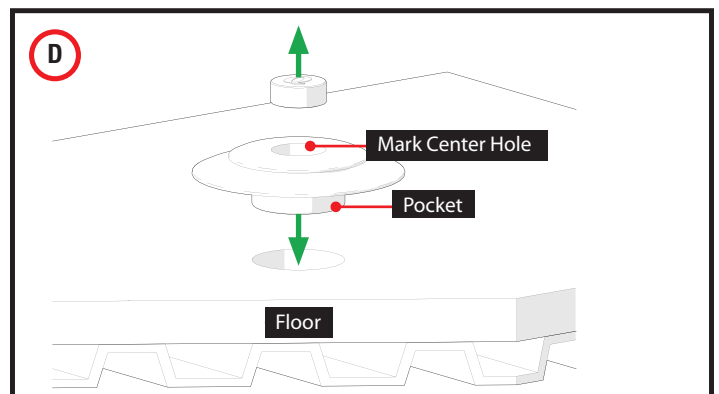
Recommended distances for Slide 'n Click Floor Anchorages (B).



2. Route an area in the floor for each Floor Anchorage Pocket—1.34" (34mm) diameter and .44" (11mm) Deep (C). Clean out debris.



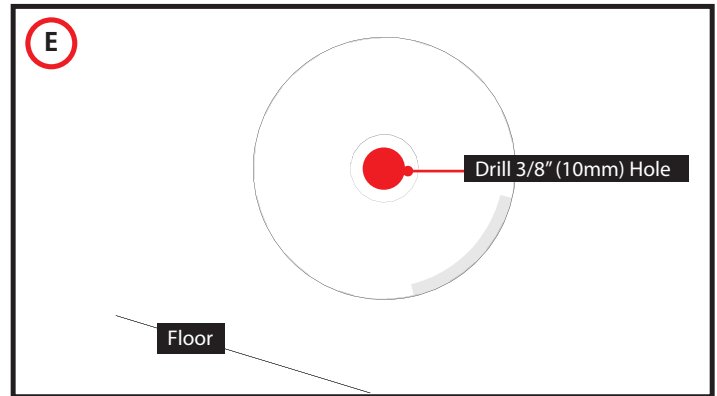
3. Remove Rubber Plug, insert Pocket into floor and use it as template to mark center hole for drilling (D).



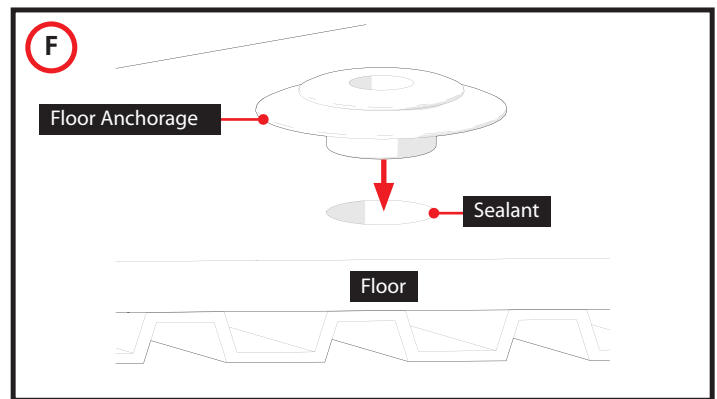


## SLIDE 'N CLICK ANCHORAGE INSTALLATION

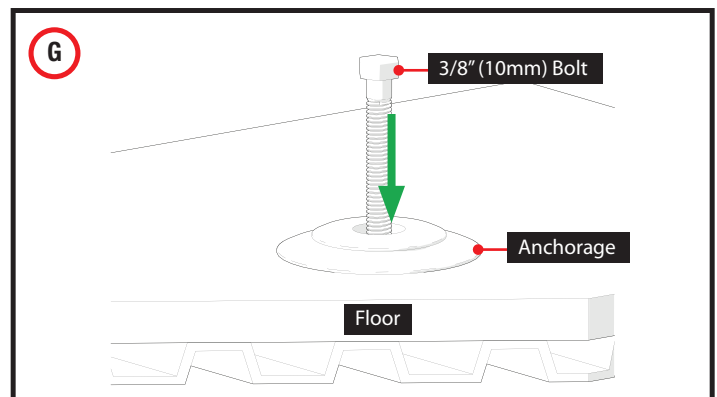
4. Remove Floor Anchorage and drill 3/8" (10mm) hole through floor (**E**). Clean out debris.



5. Place sealant inside floor opening and install Floor Anchorage into floor (**F**).



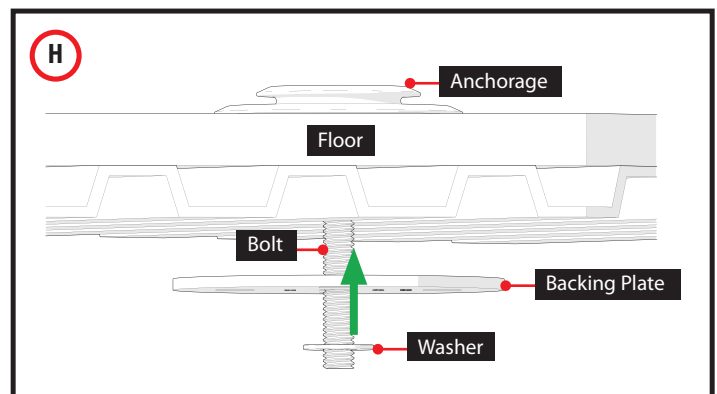
6. Put 3/8" (10mm) Bolt through Anchorage and floor (**G**).



7. From underneath vehicle floor, put Bolt through Backing Plate and Washer (**H**).



We recommend using sealant between Backing Plate and floor.



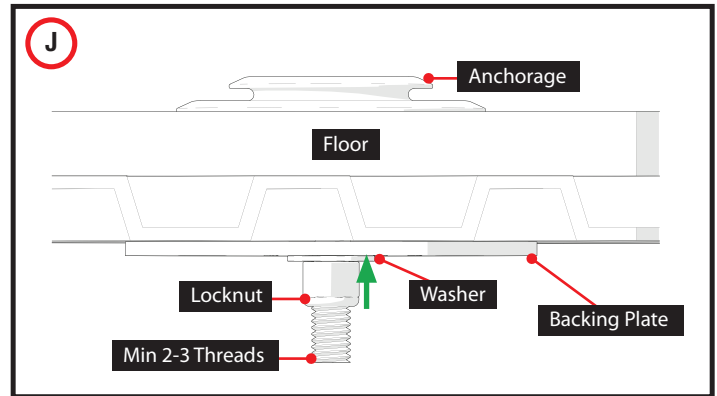


## SLIDE 'N CLICK ANCHORAGE INSTALLATION

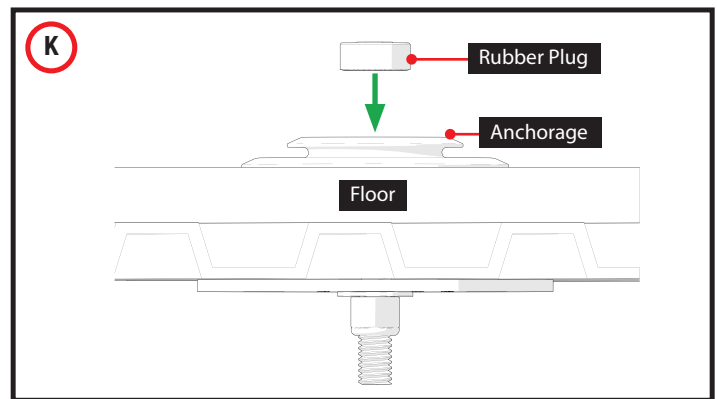
8. Secure Bolt with Locknut, leaving a minimum of 2-3 threads from Bolt sticking out (J).



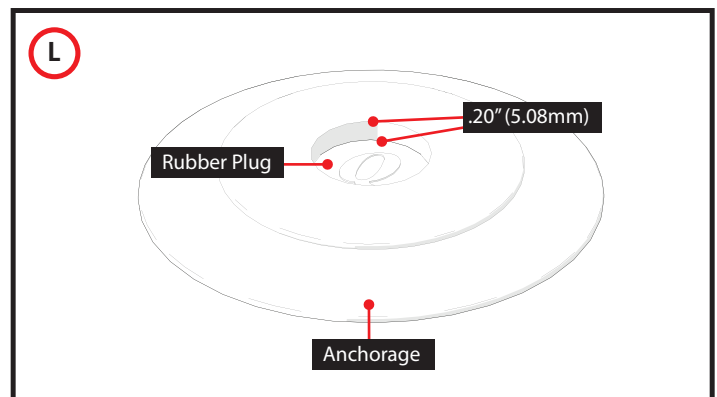
**Use a thin wall socket. Recommended torque, 35 FT/LB (47 Nm).**



9. Insert Rubber Plug into Floor Anchorage and push it down firmly onto Bolt head (K).



Leave a minimum distance of approximately .20" (5.08mm) from Rubber Plug to top of Floor Anchorage (about the width of a standard pencil eraser) (L).



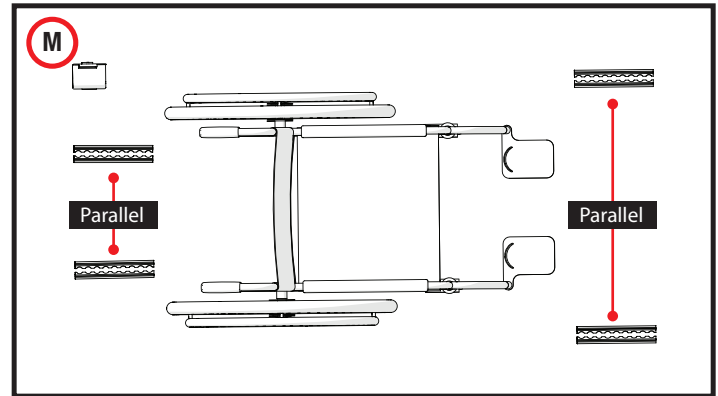
10. Repeat steps 2-9 for the remaining 3 Slide 'n Click Floor Anchorages.



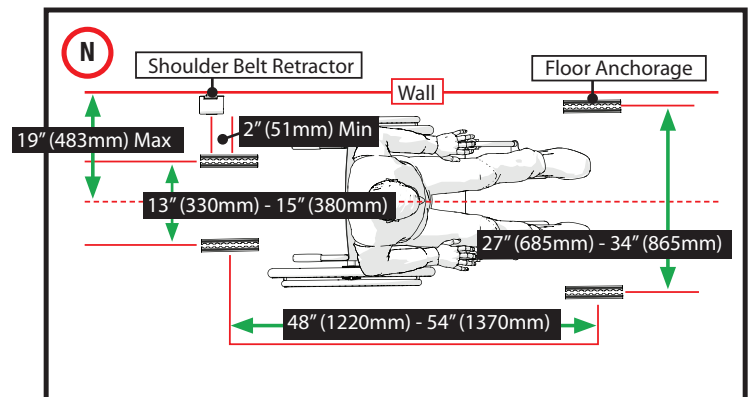
## L-TRACK ANCHORAGE AND END CAPS INSTALLATION



L-Track (including full length track) can be installed parallel to wheelchair location (**M**).

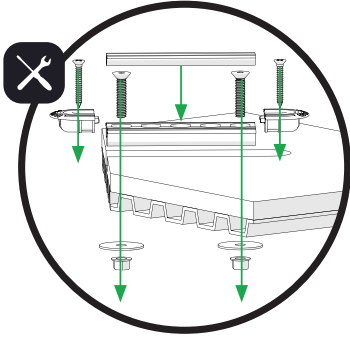


Recommended distance for L-Track Floor Anchorages (**N**).

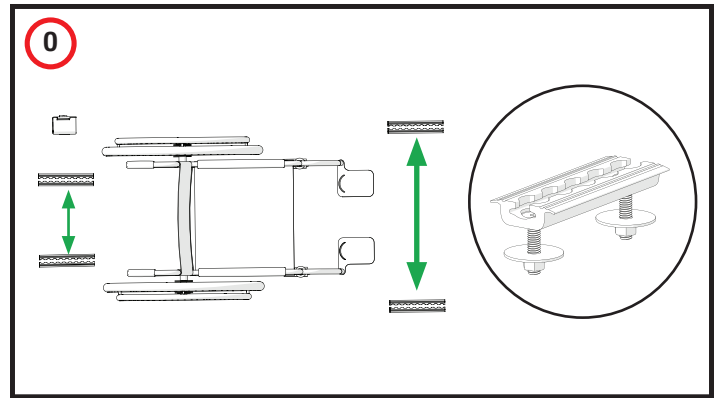




## L-TRACK ANCHORAGE AND END CAPS INSTALLATION



L-Track Anchorage and End Caps Installation Sequence

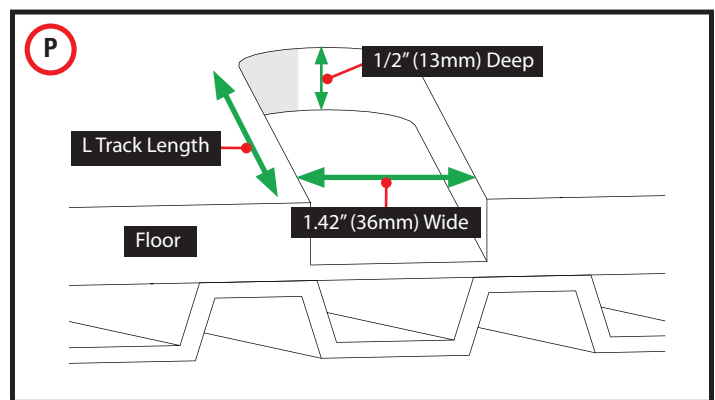


1. Choose and mark location for installing the L-Track Anchorages (O).

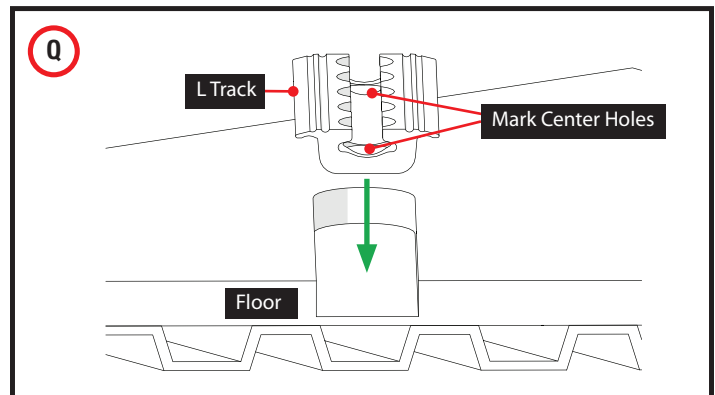


**If installing the End Caps follow steps below:  
If not, proceed to step 2. (Note: Routing for L-Tracks  
and End Caps should be done at the same time.)**

- Mark location for installing the End Caps at the end of each L-Track.
- Then, route an area in the floor for End Caps—1/2" (13mm) deep and 1.42" (36mm) wide with semi-circular diameter to match End Cap profile (P). Clean out debris.
- **Proceed to step 2.**



2. Route an area in the floor for each L-Track—1.42" (36mm) wide, 1/2" (13mm) deep and L-Track length (P). Clean out debris.

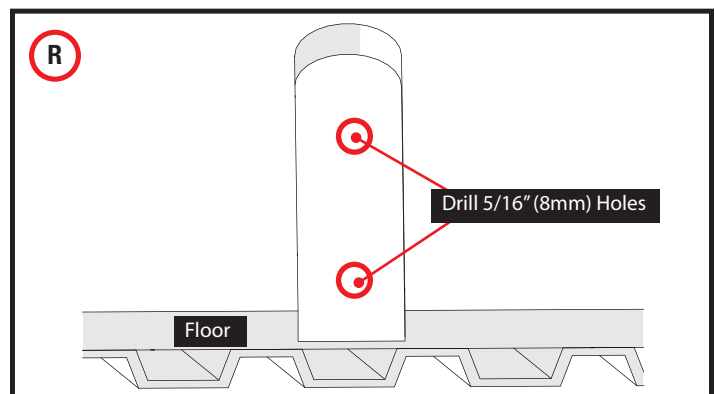


3. Insert L-Track into floor and use it as a template to mark center holes for drilling (Q).

4. Remove L-Track and drill 5/16" (8mm) holes through floor per track drilling pattern (R) and clean out debris.



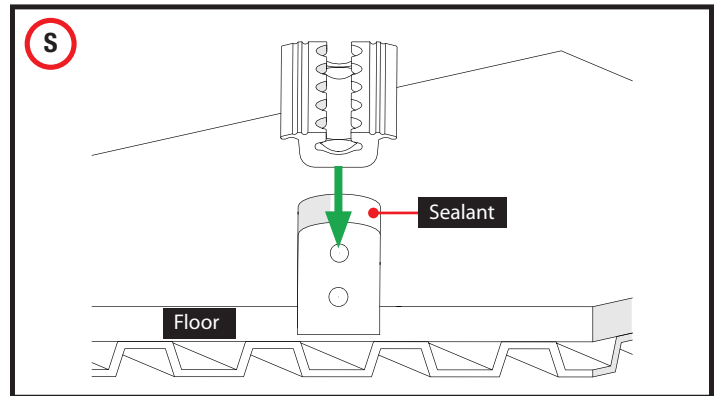
**Note:** Standard track drilling pattern = holes every 4" (102mm).



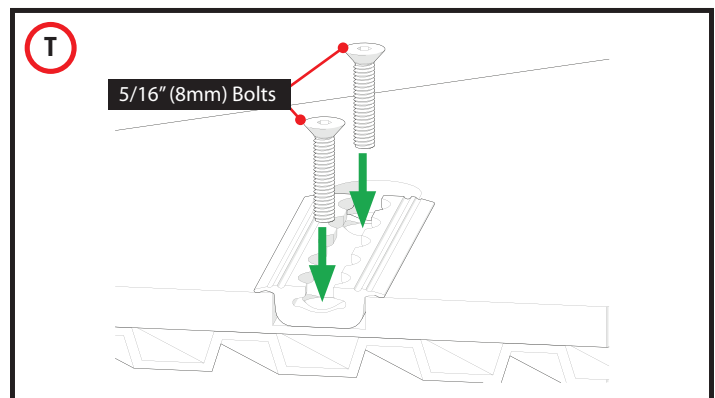


## L-TRACK ANCHORAGE AND END CAPS INSTALLATION

5. Place sealant inside floor opening and install L-Track into floor (**S**).



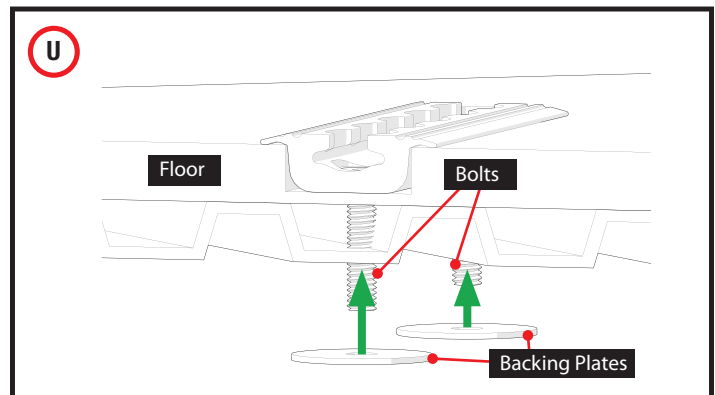
6. Put 5/16" (8mm) Bolts through L-Track and floor (**T**).



7. From underneath vehicle floor, put Bolts through Backing Plates (**U**).



We recommend using sealant between Backing Plate and floor.

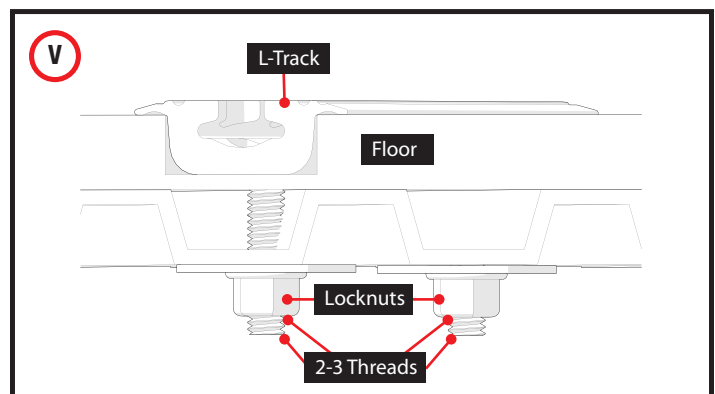


8. Secure Bolts with Locknuts, leaving a minimum of 2-3 threads from Bolt sticking out (**V**).



**Recommended torque, 25 FT/LB (34 Nm).**

9. Repeat steps 2-8 for the remaining L-Track Anchorages.





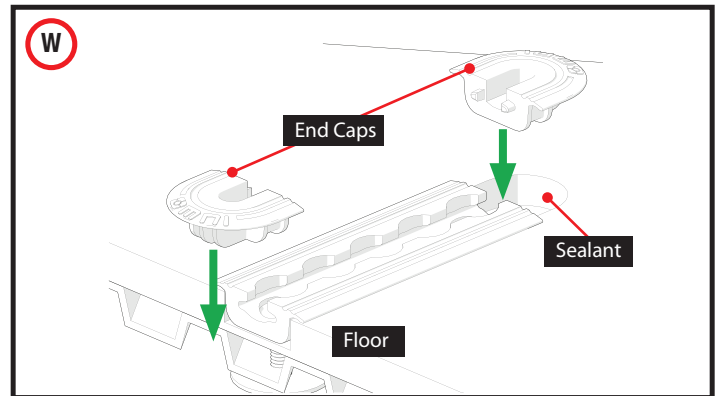


## L-TRACK ANCHORAGE AND END CAPS INSTALLATION

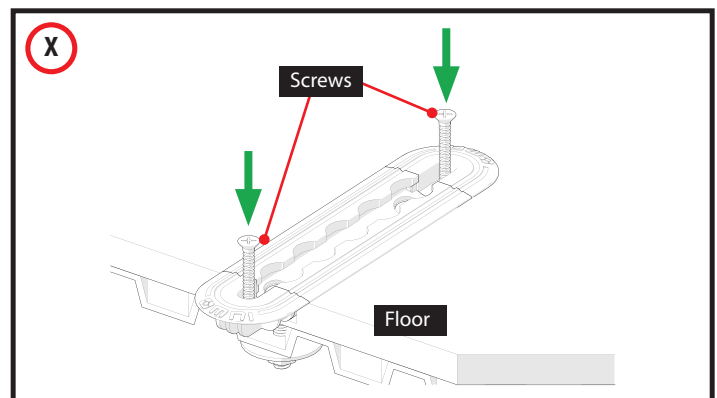


**If installing End Caps, follow steps 10-11.**

10. Clean out debris. Place sealant inside floor opening and install End Caps into floor (**W**).

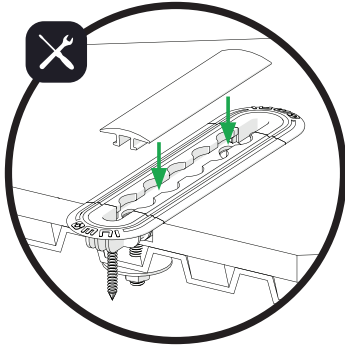


11. Secure End Caps to floor with screws (**X**).



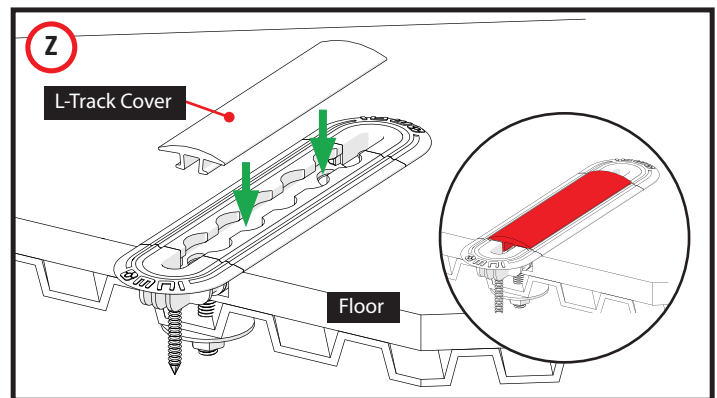
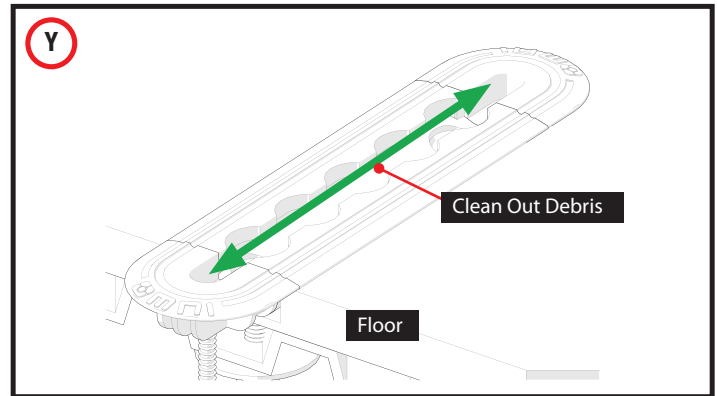


## L-TRACK COVER INSTALLATION



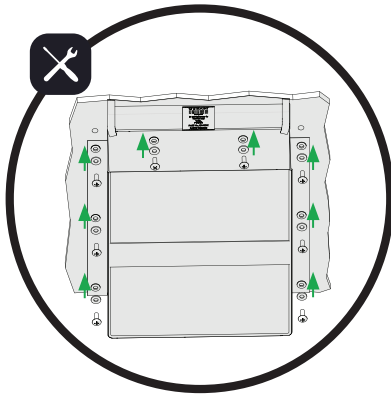
**L-Track Cover Installation Sequence**

1. Clean out debris from L-Tracks (and End Caps) with pressurized air (**Y**).
2. Place L-Track Cover over L-Track and snap into place (**Z**).





## WALL POUCH INSTALLATION

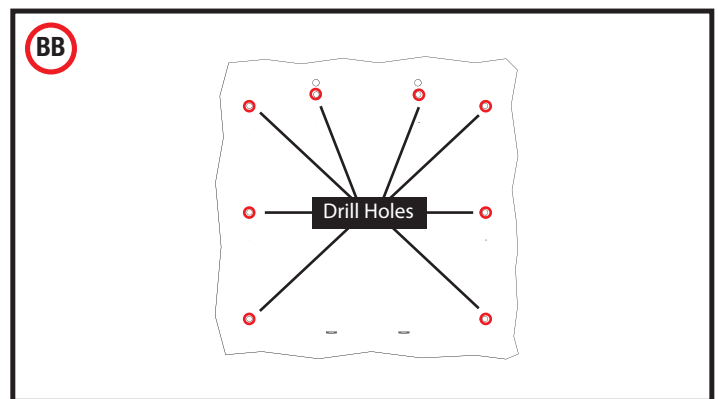
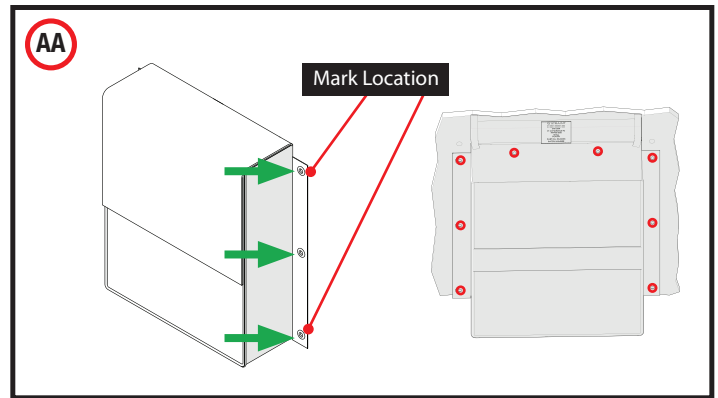


**Wall Pouch  
Installation Sequence**

1. Select a structurally sound area in the vehicle (wall or under a flip-seat) to install Wall Pouch. Use Wall Pouch as a template to mark location (8 holes) for installation (**AA**).



We recommend installing Wall Pouch on vehicle's side wall and near wheelchair location for easy accessibility.

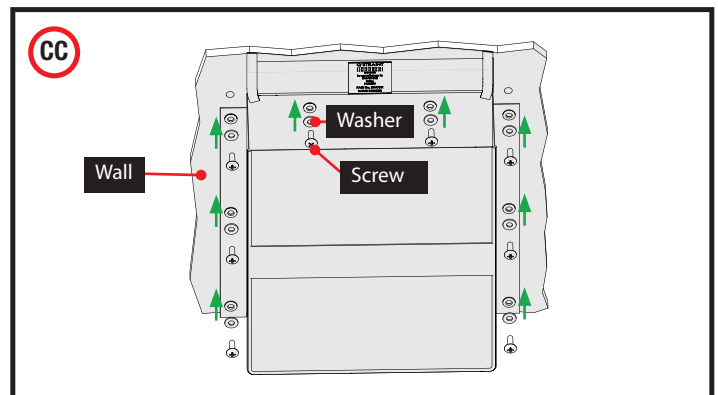


2. Remove Wall Pouch and drill 8 holes (**BB**). Clean out debris.

3. Secure Wall Pouch to selected area by putting Screws through Washers, Wall Pouch, wall and tightening Screws (**CC**).



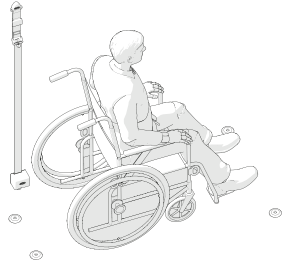
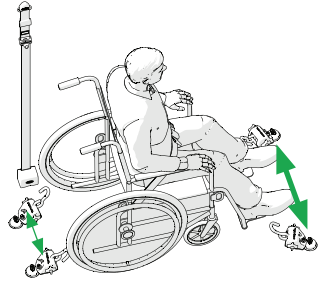

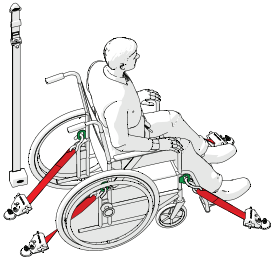
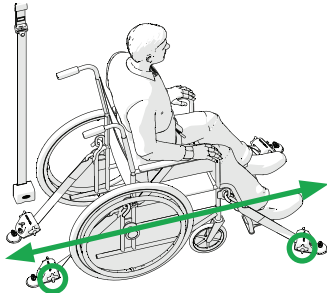
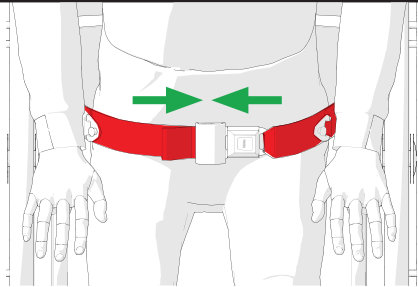
**Use (Grade 8) Screws and Washers.**



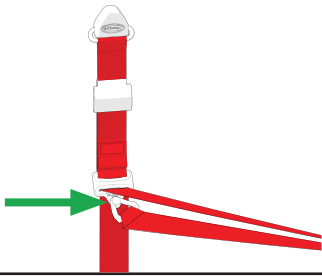
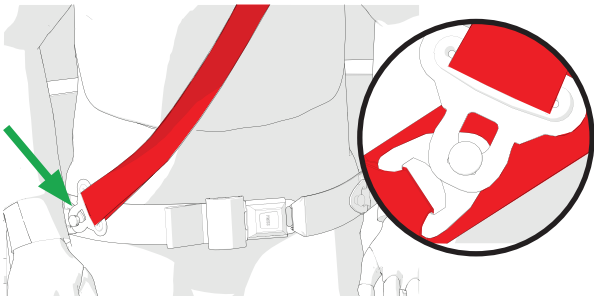
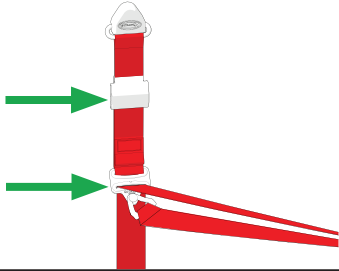
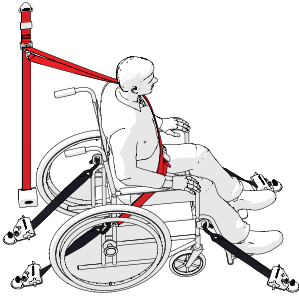
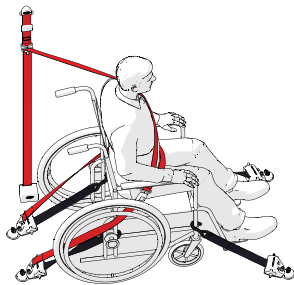
## TESTING THE TITAN 800 SYSTEM



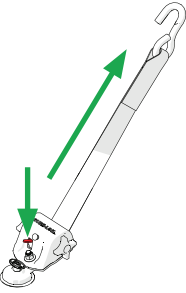
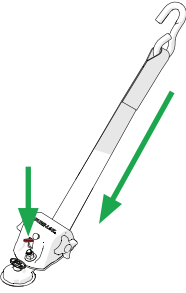
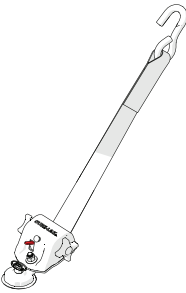
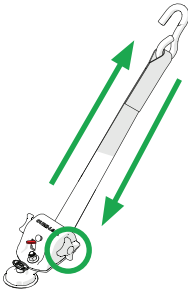
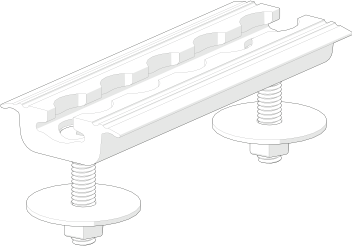
This is a quick guide, for complete operating instructions see Use and Care Manual to test the Titan 800 4-Point Wheelchair Securement System. The Use and Care Manual **MUST** first be read and understood before using this securement system.

#	OPERATING SEQUENCE	IMAGE
1	Center wheelchair facing forward in Securement Zone and lock wheelchair brakes (or power off electric chair).	
2	Attach 4 Retractors into Floor Anchorage points and lock them in place, with an approximate distance of 48" to 54" between front and rear Retractors.	
3	<p>Completely pull out each Webbing and attach J-Hooks to compliant WC19 Chair Securement Points near seat level (or solid frame members) at an approximate 45 degree side angle.</p> <p> Retractors are locked <b>ONLY</b> when Sew Pattern is completely visible on the Retractor's Webbing.</p>	
4	Move Wheelchair forward and back to remove webbing slack or manually tension webbing with Retractor Knobs.	
5	Make sure WC19 chair's Pelvic Belt is buckled over occupant's hips.	

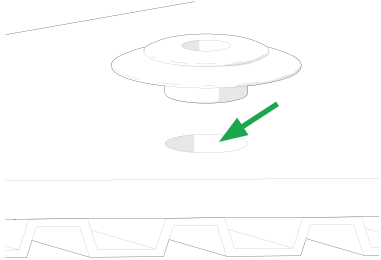
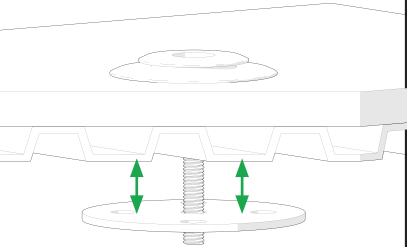
## TESTING THE TITAN 800 SYSTEM

#	OPERATING SEQUENCE	IMAGE
6	Attach Shoulder Belt Pin Connector to Pin located on Shoulder Belt Height Adjuster.	 A diagram showing a red shoulder belt strap with a white pin connector. A green arrow points to the pin connector, which is being attached to a pin on a height adjuster.
7	Pull Shoulder Belt over occupant's chest and attach Shoulder Belt Pelvic Connector to Pin on Compliant WC19 Pelvic Belt.	 A diagram showing a person's torso with a red shoulder belt and a white pelvic belt. A green arrow points to the shoulder belt being pulled over the chest. A circular inset shows a close-up of the red shoulder belt pin connector being attached to a pin on the white pelvic belt.
8	Adjust Shoulder Belt Height so that Shoulder Belt rests on Shoulder.	 A diagram showing a red shoulder belt strap with a white pin connector. Two green arrows point to the pin connector, indicating the adjustment of the height.
9	<b>Secured WC19 Wheelchair:</b> After the occupant and vehicle are secured, the occupant is ready for transportation.	 A diagram showing a person seated in a wheelchair, secured with the Titan 800 system. The red shoulder belt and white pelvic belt are visible, and the person is ready for transportation.
10	<b>Secured Non WC19 Wheelchair:</b> After the occupant and vehicle are secured, the occupant is ready for transportation.	 A diagram showing a person seated in a non-WC19 wheelchair, secured with the Titan 800 system. The red shoulder belt and white pelvic belt are visible, and the person is ready for transportation.

## TROUBLESHOOTING

PROBLEM	IMAGE	ANSWER
<b>The webbing is twisted inside the retractor.</b>		Press and hold Red Release Lever then pull J-Hook until webbing is straight.
<b>The retractor(s) is (are) not releasing the webbing.</b>		Press and hold Red Release Lever to release webbing from retractor.
<b>The retractor(s) is (are) not working.</b>		Call a Sure-Lok® authorized dealer.
<b>The retractor webbing is slacking.</b>		Pull the J-Hook and slowly release to retract webbing or turn the Retractor Knob on either side of retractor to remove slack.
<b>When installing the L-Track how many holes should be drilled per track?</b>		Standard track drilling pattern = holes every 4" (102mm).

## TROUBLESHOOTING

PROBLEM	IMAGE	ANSWER
Is it necessary to put sealant between floor anchorages and floor?		We recommend to use sealant between floor anchorages and floor.
Is it necessary to put sealant between floor and Backing Plate?		We recommend to use sealant between floor and Backing Plate.

## MAINTENANCE AND CARE

Date \_\_\_\_\_

Vehicle Owner's Name \_\_\_\_\_

Vehicle Identification # \_\_\_\_\_ Serial # of Titan 800 \_\_\_\_\_

1. The following items should be inspected and serviced by an experienced and trained technician during the scheduled maintenance of the Titan 800 4-Point Wheelchair Securement System.

- ☐ Clean all debris from floor anchorages.
- ☐ Clean all Titan 800 retractors.
- ☐ Verify that all manual release systems are functioning properly.
- ☐ Verify that all Titan 800 retractors are working properly.
- ☐ Verify that occupant securement system (shoulder and lap belts) are working properly.
- ☐ Verify that all seatbelt systems are not worn or frayed. Replace as needed.
- ☐ Verify that occupant securement system is not damaged or corroded. Replace if needed.
- ☐ Verify that floor anchorages are not damaged or corroded. Replace if needed.
- ☐ Verify that all mounting bolts are tight.
- ☐ Inspect all webbing for fraying. Replace any that have frayed.
- ☐ Inspect entire system to make sure everything is working properly and replace anything that is needed.

2. Any deficiencies shall be noted below and rectified before the Titan 800 4-Point Wheelchair Securement System is released to the consumer for use.

3. If the repairing technician has any issues not covered by this document or is not clear on what corrective action needs to be taken, they **MUST** consult the nearest Sure-Lok® office listed on the back page of this manual.

Deficiencies Noted: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Action Taken: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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











Safe and Secure

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