

# *Solara<sup>®</sup> 3G/Spree 3G*



**DEALER:** Keep this manual. The procedures in this manual **MUST** be performed by a qualified technician.

For more information regarding  
Invacare products, parts, and services,  
please visit [www.invacare.com](http://www.invacare.com)



**Yes, you can.<sup>®</sup>**

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## WARNING

**DO NOT** use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as owner's manuals, service manuals or instruction sheets supplied with this product or optional equipment. If you are unable to understand the warnings, cautions or instructions, contact a healthcare professional, dealer or technical personnel before attempting to use this equipment - otherwise, injury or damage may occur.

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## ACCESSORIES WARNING

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

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*NOTE: Updated versions of this manual are available at [www.invacare.com](http://www.invacare.com).*

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## SPECIAL NOTES

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. Refer to the table below for definitions of the signal words.

SIGNAL WORD	MEANING
DANGER	Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage, minor injury or both.

### NOTICE

**THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.**

#### **WHEELCHAIR USER**

As a manufacturer of wheelchairs, Invacare endeavors to supply a wide variety of wheelchairs to meet many needs of the end user. However, final selection of the type of wheelchair to be used by an individual rests solely with the user and his/her healthcare professional capable of making such a selection.

#### **WHEELCHAIR TIE-DOWN RESTRAINTS AND SEAT RESTRAINTS (TRRO OR TRBKTS)**

TRRO includes four factory-installed transport brackets and a wheelchair anchored pelvic belt. TRRO has been crash-tested in accordance with ANSI/RESNA WC Vol 1 Section 19 Frontal Impact Test requirements for wheelchairs with a 168 lb crash dummy, which corresponds to a person with a weight of 114 to 209 lbs.

TRBKTS includes four factory-installed wheelchair transport brackets. TRBKTS has not been crash-tested in accordance with WC 19. Use these transport brackets only to secure an unoccupied wheelchair during transport.

Only use the transport brackets included with TRRO and TRBKTS for the purposes described in this manual.

As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type. It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation systems.

Refer to Transport Ready Option in the owner's manual p/n 1154295 for more information about transporting the wheelchair.

**⚠ WARNING**

Only use the transport brackets included with TRRO and TRBKTS for the purposes described in this manual.

**SEAT POSITIONING STRAP**

**ALWAYS** wear your seat positioning strap. Inasmuch as the SEAT POSITIONING STRAP is an option on this wheelchair (you may order with or without the seat positioning strap), Invacare strongly recommends ordering the seat positioning strap as an additional safeguard for the wheelchair user. The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt **MUST** be replaced immediately.

As regards restraints - seat/chest positioning straps - it is the obligation of the DME dealer, therapists and other healthcare professionals to determine if a seat/chest positioning strap is required to ensure the safe operation of this equipment by the user. **SERIOUS INJURY CAN OCCUR IN THE EVENT OF A FALL FROM A WHEELCHAIR.**

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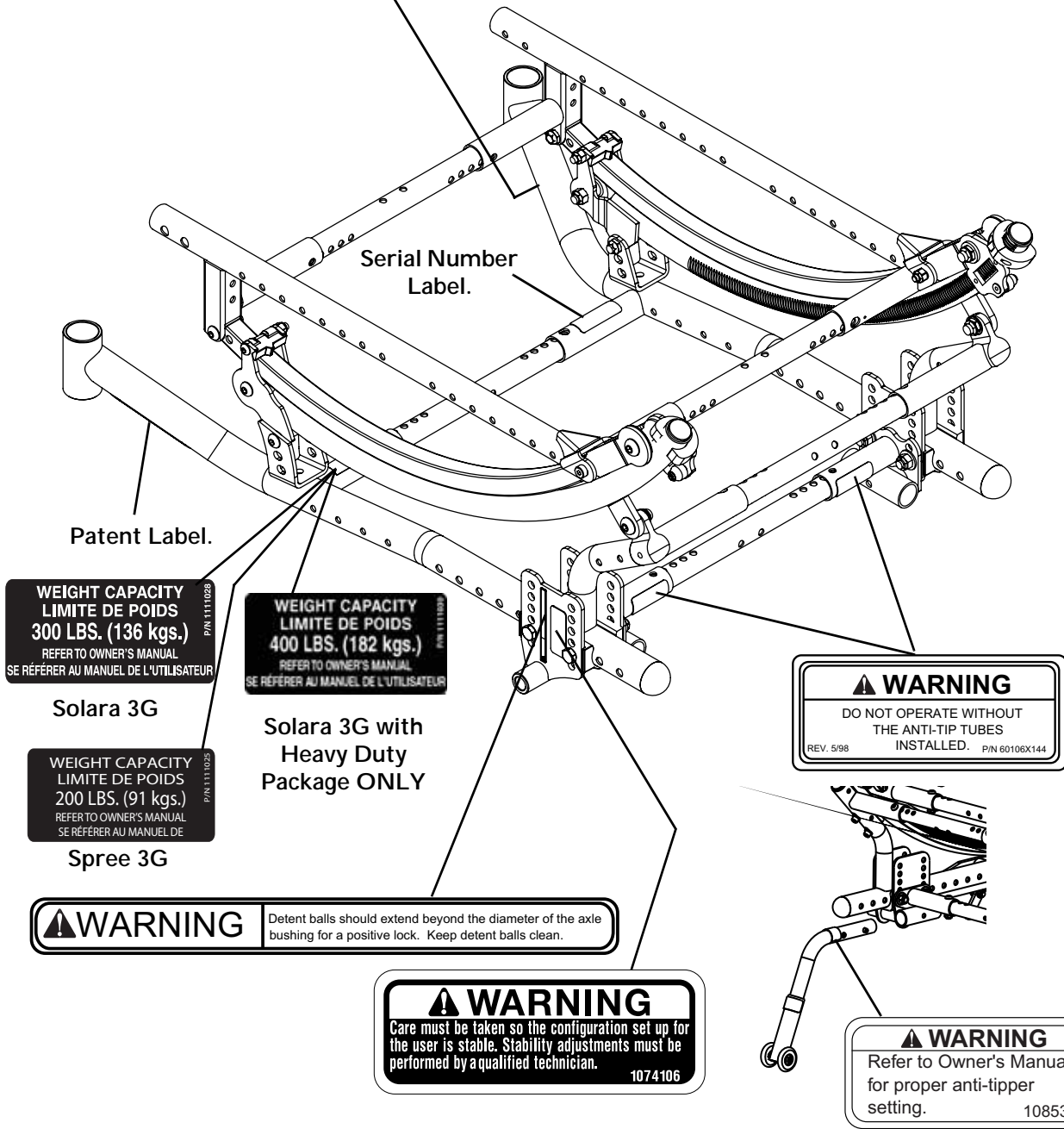


# LABEL LOCATIONS

## Wheelchairs without Transport Ready Option

NO WHEELCHAIR HAS BEEN APPROVED FOR USE AS A SEATING SURFACE WITHIN A MOTOR VEHICLE. THIS LABEL IS FOR INFORMATIONAL PURPOSES ONLY. LIABILITY ISSUES WERE NOT CONSIDERED IN THE ATTACHMENT OF THIS LABEL.

AUCUN FAUTEUIL ROULANT N'A ÉTÉ APPROUVÉ POUR ÊTRE UTILISÉ COMME SIÈGE À L'INTÉRIEUR D'UN VÉHICULE MOTORISÉ. CETTE ÉTIQUETTE NE PEUT ÊTRE UTILISÉE QU'A TITRE D'INFORMATION ET N'A PAS ÉTÉ AFFICHÉE ICI POUR DES RAISONS DE RESPONSABILITÉ LÉGALE



Serial Number Label.

Patent Label.

**WEIGHT CAPACITY**  
**LIMITE DE POIDS**  
**300 LBS. (136 kgs.)**  
REFER TO OWNER'S MANUAL  
SE RÉFÉRER AU MANUEL DE L'UTILISATEUR  
P/N 111028

Solara 3G

**WEIGHT CAPACITY**  
**LIMITE DE POIDS**  
**200 LBS. (91 kgs.)**  
REFER TO OWNER'S MANUAL  
SE RÉFÉRER AU MANUEL DE  
P/N 111025

Spree 3G

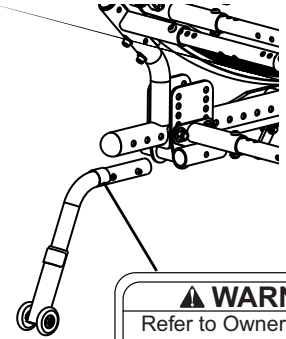
**WEIGHT CAPACITY**  
**LIMITE DE POIDS**  
**400 LBS. (182 kgs.)**  
REFER TO OWNER'S MANUAL  
SE RÉFÉRER AU MANUEL DE L'UTILISATEUR  
P/N 111030

Solara 3G with  
Heavy Duty  
Package ONLY

**⚠ WARNING**  
DO NOT OPERATE WITHOUT  
THE ANTI-TIP TUBES  
INSTALLED. P/N 60108X144  
REV. 5/98

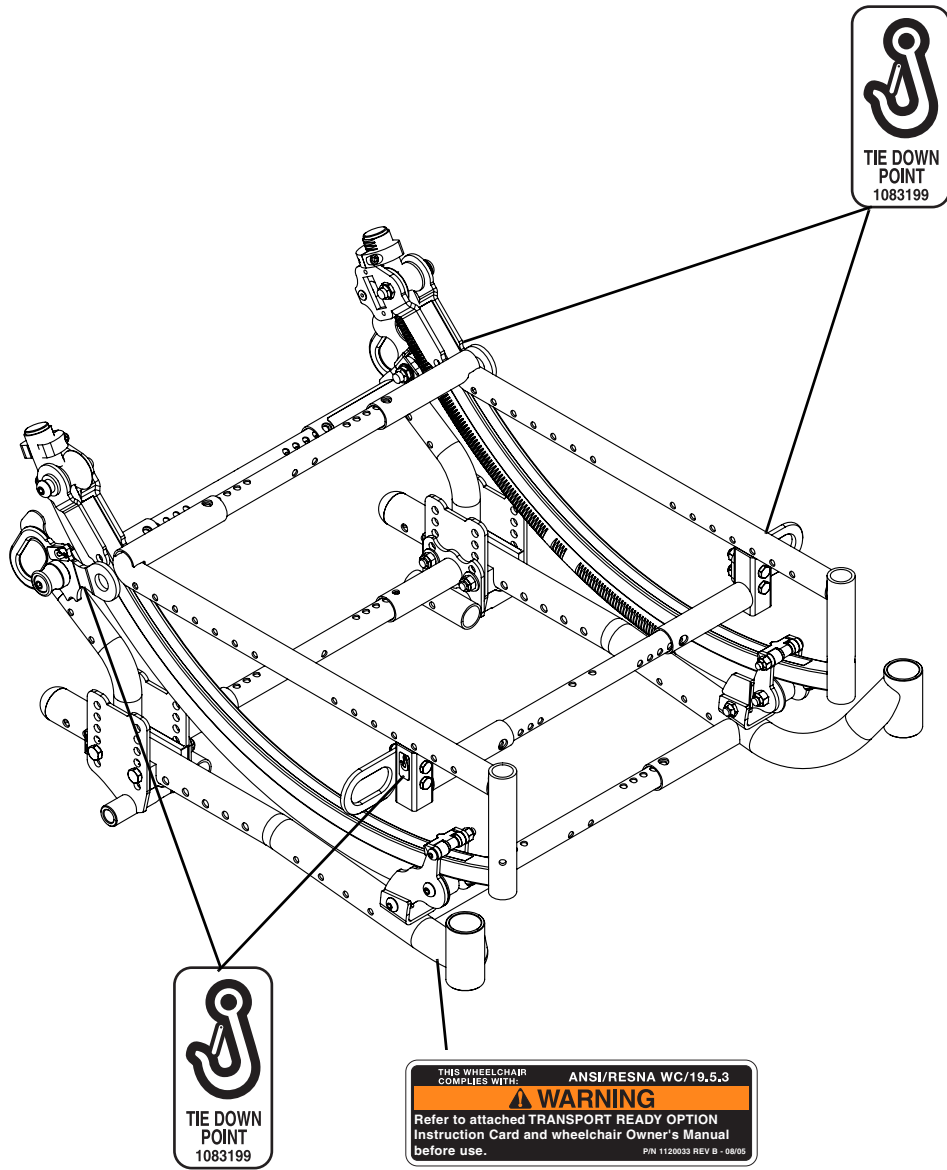
**⚠ WARNING** Detent balls should extend beyond the diameter of the axle bushing for a positive lock. Keep detent balls clean.

**⚠ WARNING**  
Care must be taken so the configuration set up for the user is stable. Stability adjustments must be performed by a qualified technician.  
1074106



**⚠ WARNING**  
Refer to Owner's Manual for proper anti-tipper setting.  
1085379

# Wheelchairs with Transport Ready Option



## TYPICAL PRODUCT PARAMETERS

	SOLARA 3G	SPREE 3G
<b>OVERALL WIDTH:</b> 12 INCH WHEEL 16-24 INCH WHEELS	Seat Width + 8 1/4 inches Seat Width + 9 1/4 inches (Example: 16 inch Wide Wheelchair = 24 1/4 inches Overall Width)	
<b>OVERALL DEPTH:</b>	Without Front Riggings Short Frame - 24 3/8 inches Medium Frame - 27 3/8 inches Long Frame - 30 3/8 inches	Without Front Riggings Short Frame - 24 3/8 inches Medium Frame - 27 3/8 inches
<b>OVERALL HEIGHT</b> ADJUSTABLE HEIGHT CANES: 20 INCH BACK CANES: 24 INCH BACK CANES:	* Seat-to-Floor Height + 20 - 24 inches * Seat-to-Floor Height + 21 inches * Seat-to-floor Height + 25 inches	
<b>SHIPPING WEIGHT:</b>	66 lbs	63 lbs
<b>ANTI-TIPPERS:</b>	Standard	
<b>FOOTREST:</b>	Swing-Away Footrest (Standard) Articulating Swing-Away Footrest, elevating Swingaway Footrests, Lift Off Footrests, Contracture Footrests (Optional)	
<b>ARMRESTS:</b>	Two Point - Adjustable Height Two Point Fixed Height - Desk Length Two Point Fixed Height - Full Length Adjustable Height - T-Arms Two Point-Flip Back Cantilever Arms Desk and Full Non-Locking Cantilever Arms	Two Point - Adjustable Height Two Point Fixed Height - Desk Length Two Point Fixed Height - Full Length Adjustable Height - T-Arms Two Point-Flip Back Cantilever Arms Desk and Full Non-Locking Cantilever Arms
<b>SEAT:</b>	Optional	
<b>SEAT PAN COLOR:</b>	Black	
<b>BACK:</b>	Optional	
<b>BACK ANGLE ADJUSTMENT:</b>	90° to 120°	
<b>REAR AXLE:</b>	Quick-Release or Fixed	
<b>REAR WHEELS:</b>	12 inches Pneumatic (Standard); 12 inch Pneumatic with flat free (Optional); 16, 18, 20, 22 and 24 inch Pneumatic, Urethane or Pneumatic with flat free (Optional)	
<b>HANDRIMS:</b>	Aluminum Handrims, Plastic Coated, Projection	
<b>CASTER SIZE:</b>	6 x 2 inch with Precision Sealed Bearings (Standard); 8-inch with Precision Sealed Bearings (Optional), 4 x 1 5 x 1 or 6 x 1 inch with Precision Sealed Bearings (Optional).	
<b>SEAT WIDTH:</b>	12 - 24 inches	
<b>SEAT DEPTH</b> SHORT FRAME: MEDIUM FRAME: LONG FRAME:	12-16 inches 15-19 inches 18-22 inches	12-16 inches 15-19 inches
<b>BACK HEIGHT:</b>	17-20 inches Adjustable; 20 or 24 inches Fixed	
<i>*NOTE: The seat-to-floor heights are based on pneumatic tires and pneumatic tires with flat free inserts. If wheelchair is equipped with urethane tires, subtract 1/4 inch from the measurements listed above. All heights are measured with properly inflated new tires. These heights can vary + 1/4 inch due to tire wear.</i>		

## TYPICAL PRODUCT PARAMETERS

<b>WHEEL LOCKS:</b>	Push-to-Lock (Standard) or Pull-to-Lock, Footlock, HubLock	
<b>TILT-IN-SPACE:</b>	Dual Cable Trigger Mechanism (Standard) - 5° to 50° of Tilt or Foot Pedal Mechanism	
<b>RECLINER BACK:</b>	Dual Cable Trigger Mechanism (Optional) 0-175° of Tilt	
<b>FRAME:</b>	Steel	
<b>WEIGHT LIMITATION:</b>	Solara 3G: 300 lbs (136 kg) Solara with Heavy Duty Package: 400 lbs (182 kg)	Spree 3G: 200 lbs (91 Kgs)
<p><i>*NOTE: The seat-to-floor heights are based on pneumatic tires and pneumatic tires with flat free inserts. If wheelchair is equipped with urethane tires, subtract 1/4 inch from the measurements listed above. All heights are measured with properly inflated new tires. These heights can vary + 1/4 inch due to tire wear.</i></p>		

## SECTION 1—GENERAL GUIDELINES

### ⚠ WARNING

SECTION 1 - GENERAL GUIDELINES contains important information for the safe operation and use of this product.

### Information for Healthcare Professionals/Assistants

The Solara 3G/Spree 3G wheelchair MUST be operated by a healthcare professional or assistant when in any tilt position.

#### Anterior (Forward) Tilt

DO NOT operate the wheelchair when the seat frame is in the anterior (forward) tilt position (frame stops in the lower position and approximately 5° forward tilt). Serious bodily injury may occur to the patient and/or the assistant(s).

Anterior (forward) tilt is a feature of this wheelchair designed for the USE OF A HEALTHCARE PROFESSIONAL or ASSISTANT ONLY. Engagement of the anterior (forward) tilt must NEVER be performed by the wheelchair user. When anterior (forward) tilt is needed, it must ALWAYS be engaged by a healthcare professional or assistant. Make sure the occupant of the wheelchair is properly positioned and always engage both wheel locks.

#### Stability - All Models

The back height, seat depth, back angle, seating system, tilt angle, seat height, size/position of the rear wheels, size/position of the front casters, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the eleven may cause the wheelchair to decrease in stability. These adjustments MUST be performed by a qualified technician.

ALWAYS make sure that the wheelchair is stable before using the tilt-in-space.

<i>NOTE: When changes to the left hand column occur, follow across the chart and refer to the X procedure to maintain the proper stability, safety and handling of the wheelchair.</i>	BACK HEIGHT	SEAT DEPTH	BACK ANGLE	SEATING SYSTEM	TILT ANGLE	CASTER SIZE	CASTER POSITION	WHEEL SIZE	WHEEL POSITION	USER CONDITION	WHEEL LOCKS	ANTI-TIPPERS	LOCKING COLLAR	TILT CABLES
BACK HEIGHT	•	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A	N/A
SEAT DEPTH	X	•	X	X	N/A	X	X	X	X	N/A	N/A	N/A	X	X
BACK ANGLE	X	X	•	X	X	X	X	X	X	N/A	N/A	N/A	X	X
SEATING SYSTEM	X	X	X	•	X	X	X	X	X	X	N/A	N/A	X	X
TILT ANGLE	N/A	N/A	X	N/A	•	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X	N/A
CASTER SIZE	X	N/A	X	N/A	N/A	•	X	X	X	N/A	X	X	X	N/A
CASTER POSITION	X	N/A	X	N/A	N/A	X	•	X	X	N/A	X	X	X	N/A
WHEEL SIZE	X	N/A	X	N/A	N/A	X	X	•	X	N/A	X	X	X	N/A
WHEEL POSITION	X	N/A	X	N/A	N/A	X	X	X	•	N/A	X	X	X	N/A
USER CONDITION	X	X	X	X	X	X	X	X	X	•	N/A	N/A	N/A	N/A
SEAT HEIGHT	X	N/A	X	X	X	X	X	X	X	N/A	X	X	X	N/A

## Stability - All Models Except Recliners

To maintain maximum stability, position the rear wheel axle mounting brackets in the most rearward position. Moving the rear wheels to any of the other mounting positions causes the wheelchair to decrease in stability.

If moving the rear wheel axle mounting brackets to any forward position, ensure the wheelchair is stable before using.

ALWAYS ensure stability before using maximum amount of tilt-in-space or moving the rear wheel axle mounting brackets forward. Test wheelchair before it is occupied by the end user to ensure safety.

## Stability - Recliner Models Only

Before using ANY recline position of this wheelchair, make sure the rear wheel axle mounting brackets are in the most rearward position in the axle mounting plate to maintain the stability of the wheelchair. DO NOT change the handling/maneuverability of the wheelchair by moving the rear wheel axle mounting brackets to ANY of the forward positions. Moving the rear wheel axle mounting brackets to ANY of the forward positions WILL change the center of gravity of the wheelchair, making the wheelchair less stable.

ALWAYS make sure that the wheelchair is stable both in the full reclined (back at 180°) position and the full upright (back at 90°) position before using the recliner option.

Before using the recliner option, make sure the anti-tipper wheel assemblies are in the lowest adjustment hole (adjustment hole closest to the ground/floor).

ALWAYS engage both wheel locks while reclining or inclining (sitting up) the wheelchair.

Both gas cylinders MUST be operational and adjusted properly before using the recliner. DO NOT operate the recliner option if only one of the gas cylinders is operational or adjusted properly.

Make sure the patient is properly positioned in the wheelchair before reclining or inclining (sitting up) to maintain maximum stability and safety.

When returning the occupant of the wheelchair to the full upright position, more body strength will be required for approximately the last twenty degrees of incline (sitting up). Make sure to use proper body mechanics (use your legs) or seek assistance to avoid injury.

Always return the back to the upright position before lifting the wheelchair.

## Operation Information

Unless otherwise noted, all service and adjustments should be performed while the wheelchair is unoccupied.

To determine and establish your particular safety limits, practice bending, reaching and transferring activities in the presence of a qualified healthcare professional before attempting active use of the wheelchair.

ALWAYS wear your seat positioning strap. The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt must be replaced immediately.

If the wheelchair is exposed to extreme temperature (above 100°F or below 32°F), high humidity and/or becomes wet, prior to use, ensure handgrips DO NOT twist on the wheelchair handle - otherwise damage or injury may occur.

Always check foam grips for looseness before using the wheelchair. If loose, contact a qualified technician for instructions.

The necessary back angle (90°, 95°, 100°, 105°, 110°, 115° or 120°) MUST be selected before repositioning the rear wheels forward.

DO NOT operate the tilt-in-space if the trigger release levers and cables are not properly adjusted to ensure that the tilt-in-space is locked in place when engaged.

Pinch point may occur when returning the tilted seat to the full upright position. Make sure the hands and body of the occupant, attendants and bystanders are clear of all pinch points before returning the tilted seat to the full upright position.

DO NOT traverse, climb or go down ramps or slopes greater than 9°.

NEVER leave the occupied wheelchair unattended at any time, especially on an incline.

DO NOT attempt to reach objects if you have to move forward in the seat.

DO NOT attempt to reach objects if you have to pick them up from the floor by reaching down between your knees.

DO NOT lean over the top of the back upholstery/seating system. This will change your center of gravity and may cause you to tip over.

DO NOT shift your weight or sitting position toward the direction you are reaching as wheelchair may tip over.

DO NOT attempt to stop a moving wheelchair with wheel locks. Wheel locks are not brakes.

DO NOT tip the wheelchair onto the rear wheels without assistance.

DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur.

Before attempting to transfer in or out of the wheelchair, every precaution should be taken to reduce the gap distance. Turn both casters parallel to the object you are transferring onto. When transferring to and from the wheelchair, always engage both wheel locks.

DO NOT use wheelchair unless it has the proper tire pressure (p.s.i.). DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. Recommended tire pressure is listed on the side wall of the tire.

DO NOT attempt to lift a wheelchair by lifting on any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

DO NOT stand on the frame of the wheelchair.

Anti-tippers MUST BE attached at all times.

DO NOT use the footplates as a platform. When getting in or out of the wheelchair, make sure that the footplates are in the upward position.

ALWAYS use the handrims for self-propulsion. Inasmuch as the handrims are an option on this wheelchair (you may order with or without the handrims), Invacare strongly recommends ordering the handrims as an additional safeguard for the wheelchair user.

If wheelchair is exposed to extreme temperature (above 100°F or below 32°F), high humidity and/or becomes wet, prior to use, ensure handgrips do not twist on (product name here) handle - otherwise damage or injury may occur.

ALWAYS use anti-tippers. When outdoors on wet, soft ground or on gravel surfaces, anti-tippers may not provide the same level of protection against tip over. Extra caution must be observed when traversing such surfaces.

DO NOT use the spreader bar or stroller handles for lifting or transporting the wheelchair. DO NOT use the spreader bar as a weight bearing support.

Make sure detent balls of the quick-release pin are fully released before operating the wheelchair.

The detent balls MUST be protruding past the top of the seat plate assembly for a positive lock.

Keep detent balls clean.

### **Wheelchairs with TRRO or TRBKTS Only**

Transport ready packages are not retrofittable to existing models and are not field serviceable. Only use the transport brackets included with TRRO and TRBKTS for the purposes described in this manual.

### **Tire Pressure**

DO NOT use your wheelchair unless it has the proper tire pressure (P.S.I.). DO NOT overinflate the tires. Failure to follow these recommendations may cause the tire to explode and cause bodily harm. The recommended tire pressure is listed on the side wall of the tire.

### **Weight Training**

Invacare DOES NOT recommend the use of its wheelchairs as a weight training apparatus. Invacare wheelchairs have NOT been designed or tested as a seat for any kind of weight training. If occupant uses said wheelchair as a weight training apparatus, INVACARE SHALL NOT BE LIABLE FOR BODILY INJURY AND THE WARRANTY IS VOID.

### **Weight Limitation**

Invacare Solara 3G/ Spree3G wheelchairs have a weight limitation of 200 lbs (91 kgs). Invacare Solara 3G wheelchairs have a weight limitation of 300 lbs (136 kgs). Invacare Solara 3G wheelchairs with the Heavy Duty package have a weight limitation of 400 lbs (182 kgs).



## SECTION 2—SAFETY INSPECTION/TROUBLESHOOTING

*NOTE: Every six months take your wheelchair to a qualified technician for a thorough inspection and servicing. Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your wheelchair. To operate properly and safely, your wheelchair must be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your wheelchair.*

### Safety Inspection Checklists

#### CAUTION

**As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.**

Initial adjustments should be made to suit your personal body structure needs and preference. Thereafter follow these maintenance procedures:

#### Inspect/Adjust Initially

- Ensure wheelchair rolls straight (no excessive drag or pull to one side).
- Inspect clothing guards for bent or protruding metal.
- Ensure that all fasteners on clothing guards are secure.
- Ensure arms are secure but easy to release and adjustment levers engage properly.
- Ensure adjustable height arms operate and lock securely.
- Ensure armrest upholstery has no rips.
- Ensure armrest pad sits flush against arm tube.
- Ensure hand grips are not loose.
- Ensure seat, back and/or arm upholstery have no rips.
- Ensure trigger release lever cables and handles return when released.
- Inspect handrims for signs of rough edges or peeling finish.
- Ensure there is no excessive side movement or binding when drive wheels are lifted and spun.
- Ensure sealed bearings and axle nut tension are correct.
- Adjust bearing system if wheel wobbles noticeably or binds to a stop.
- Ensure wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- Loosen/tighten caster locknut if wheel wobbles noticeably or binds to a stop.
- Ensure all caster/wheel/fork/headtube fasteners are secure.
- Ensure that casters are free of debris.
- Ensure wheel locks do not interfere with tires when rolling.
- Ensure wheel lock pivot points are free of wear and looseness.
- Ensure wheel locks are easy to engage.
- Inspect tires for flat spots and wear.
- Check pneumatic tires for proper inflation.
- Check that all labels are present and legible. Replace if necessary.

#### Inspect/Adjust Weekly

- Ensure wheelchair rolls straight (no excessive drag or pull to one side).
- Ensure hand grips are not loose.
- Ensure wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- Ensure all caster/wheel/fork/headtube fasteners are secure.

- Ensure that casters are free of debris.
- Check pneumatic tires for proper inflation.

**Inspect/Adjust Monthly**

- Ensure sealed bearings and axle nut tension are correct..
- Ensure there is no excessive side movement or binding when drive wheels are lifted and spun.
- Adjust bearing system if wheel wobbles noticeably or binds to a stop.
- Inspect tires for flat spots and wear.
- Ensure wheel locks do not interfere with tires when rolling.
- Ensure wheel lock pivot points are free of wear and looseness.
- Ensure wheel locks are easy to engage.
- Inspect axles to ensure they are free from dirt, lint, etc.
- Inspect tilt slides and roller bearings to ensure they are free from dirt, lint, etc.
- Inspect seat positioning strap for any signs of wear. Ensure buckle latches. Verify hardware that attaches strap to frame is secure and undamaged. Replace if necessary.

**Inspect/Adjust Periodically**

- Inspect clothing guards for bent or protruding metal.
- Ensure that all fasteners on clothing guards are secure.
- Ensure arms are secure but easy to release and adjustment levers engage properly.
- Ensure that casters are free of debris.
- Ensure adjustable height arms operate and lock securely.
- Ensure armrest upholstery has no rips.
- Ensure armrest pad sits flush against arm tube.
- Ensure trigger release lever cables and handles return when released.
- Ensure sealed bearings and axle nut tension are correct.
- Inspect handrims for signs of rough edges or peeling finish.
- Ensure seat, back and/or arm upholstery have no rips.
- Clean upholstery and armrests.
- Clean and wax all parts.
- Check that all labels are present and legible. Replace if necessary.

**Troubleshooting - Mechanical**

CHAIR VEERS LEFT/RIGHT	SLUGGISH TURN PERFORMANCE	CASTERS FLUTTER	SQUEAKS AND RATTLES	LOOSENESS IN CHAIR	SOLUTIONS
X	X				If pneumatic tires, check for correct and equal pressure.
	X	X	X	X	Check for loose stem nuts/bolts.
X		X			Check that casters contact ground at the same time.

---

## SECTION 3—TRANSPORTING

### Transporting

1. Remove the seating system. Refer to the seating system Owner's Manual for installation and removal of the seating system.
2. Remove the footrests. Refer to Installing/Removing Footrests in the owner's manual, p/n 1154295.
3. Remove the rear wheels. Refer to Installing/Removing Rear Wheels in the owner's manual, p/n 1154295.
4. Remove the armrests. Refer to Arms in the owner's manual, p/n 1154295.
5. Remove the stroller handle (if applicable). Refer to Arms in the owner's manual, p/n 1154295.
6. Fold the back towards the front of the wheelchair. Refer to the owner's manual, p/n 1154295.

## SECTION 4—MAINTENANCE

### Maintenance Safety Precautions

---

#### **⚠ WARNING**

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

---

#### **CAUTION**

DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.

---

### Suggested Maintenance Procedures

1. Keep quick-release axles free of dirt and lint to ensure positive locking and proper operation. Refer to [Adjusting The Quick-Release Axle](#) on page 53.
- 

#### **⚠ WARNING**

DO NOT use WD-40<sup>®</sup>, 3-in-1 oil<sup>®</sup>, or other penetrating lubricants on quick-release axles. Otherwise, binding and/or damage to the wheelchair may occur.

---

2. Clean quick-release axles once a week with a Teflon<sup>®</sup> lubricant.
- 

#### **⚠ WARNING**

DO NOT use your wheelchair unless it has the proper tire pressure (p.s.i.). DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. The recommended tire pressure is listed on the side wall of the tire.

Replacement of a pneumatic tire or tube MUST be performed by a qualified technician.

---

#### **CAUTION**

As with any vehicle, the wheels, casters and tires should be checked periodically for cracks and wear, and should be replaced.

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3. If tires are pneumatic, recommended tire pressures will be listed on the side wall of the tires.
  4. The wheels and tires should be checked periodically for cracks and wear, and should be replaced.
  5. Periodically check handrims to ensure they are secured to the rear wheels.
  6. Periodically adjust wheel locks as tires wear. Refer to [Installing/Removing the Foot Operated Wheel Lock](#) on page 127.
  7. Make sure that ALL bolts are tight before operating wheelchair.
  8. Keep tilt slides and roller bearings free of dirt and lint to ensure proper operation of the tilt mechanism.
  9. Periodically check the back fold down mechanisms to ensure that they lock the back securely in place.
  10. Periodically check front caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon lubricant if necessary.
  11. Check upholstery for sagging, rips or tears.
  12. Recliners Only - Periodically check gas cylinders for oil leaks. If oil leak is detected, contact Invacare.
-

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## SECTION 5—ARMS

---

### ⚠ WARNING

After ANY adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

Make sure the locking mechanism is secured before using wheelchair.

---

### Remove/Install Non Flip Back Two Point Arms

*NOTE: For this procedure, refer to FIGURE 5.1 on page 22.*

#### Preparation

1. Remove the arms. Refer to the owner's manual, p/n 1154295.
2. Perform one of the following:
  - For chairs equipped with seat pan - remove the seat pan from the wheelchair. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.
  - For chairs equipped with seating system - remove the seating system from the wheelchair. Refer to the Seating Systems owner's manual for installing/removing procedures.

### Remove Rear and/or Front Arm Socket

1. Perform one of the following:

*NOTE: Before removing, note position of the rear arm socket in back plate for proper reinstallation.*

- A. Rear Arm Socket
  - i. Remove the two mounting screws, washers, seat positioning strap (if applicable) and locknuts that secure the rear arm socket to the backrest bracket.
  - ii. Remove existing rear arm socket from the wheelchair.
- B. Front Arm Socket
  - i. Remove the the mounting screw(s) and locknut(s) that secure the front arm socket to the seat rail.
  - ii. Remove existing front arm socket from the seat rail.

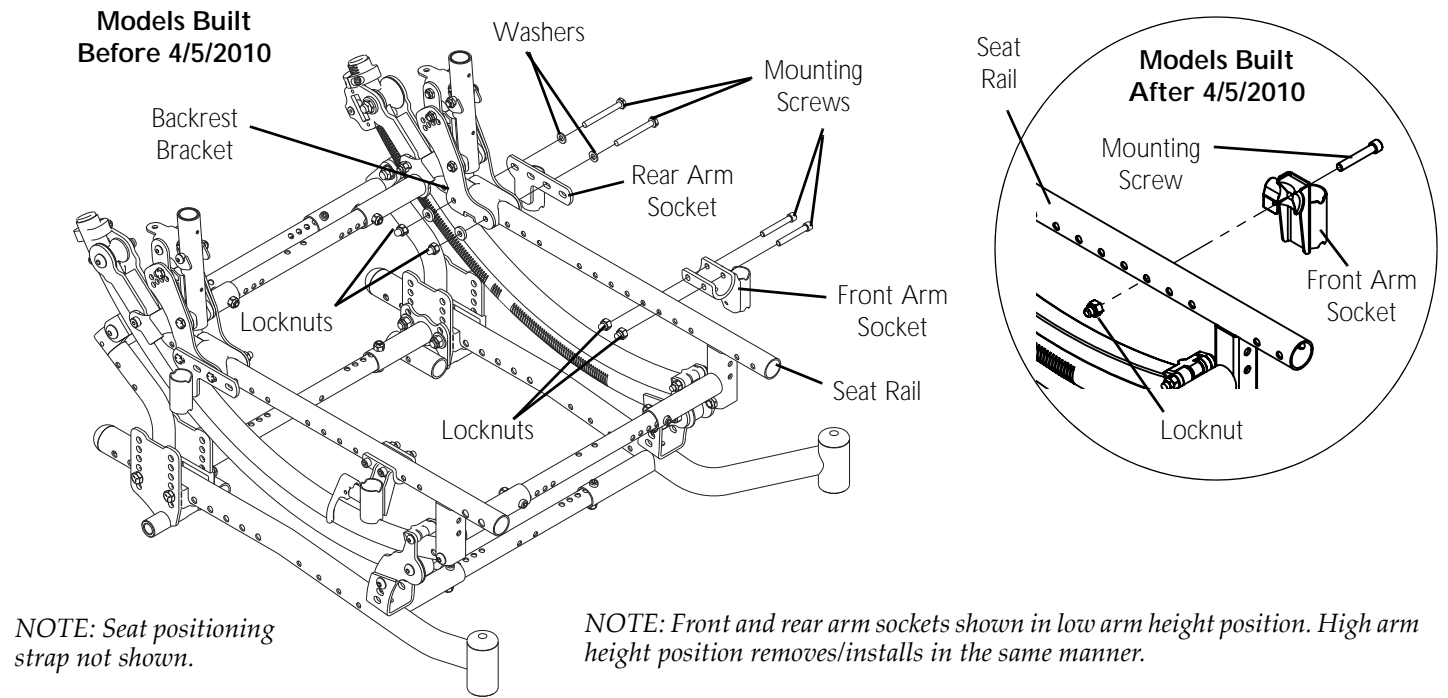
### Install Rear and/or Front Arm Socket

1. Perform one of the following:

- A. Rear Arm Socket
  - i. Secure the rear arm socket and seat positioning strap (if applicable) to the backrest bracket with existing mounting screws, washers, and locknuts. Tighten securely.
  - ii. Repeat STEPS 2-5 for opposite side, if necessary.
- B. Front Arm Socket
  - i. Secure the front arm socket to the seat rail with mounting screw(s) and locknut(s). Tighten securely.

### Reinstallation

1. Perform one of the following:
  - For chairs equipped with seat pan - install the seat pan onto the wheelchair. Refer to Install the Seat Pan on page 58.
  - For chairs equipped with seating system - Install the seating system onto the wheelchair. Refer to the Seating Systems owner's manual for installing/removing procedures.
2. Install the arms. Refer to the owner's manual, p/n 1154295.



**FIGURE 5.1** Remove/Install Non Flip Back Two Point Arms

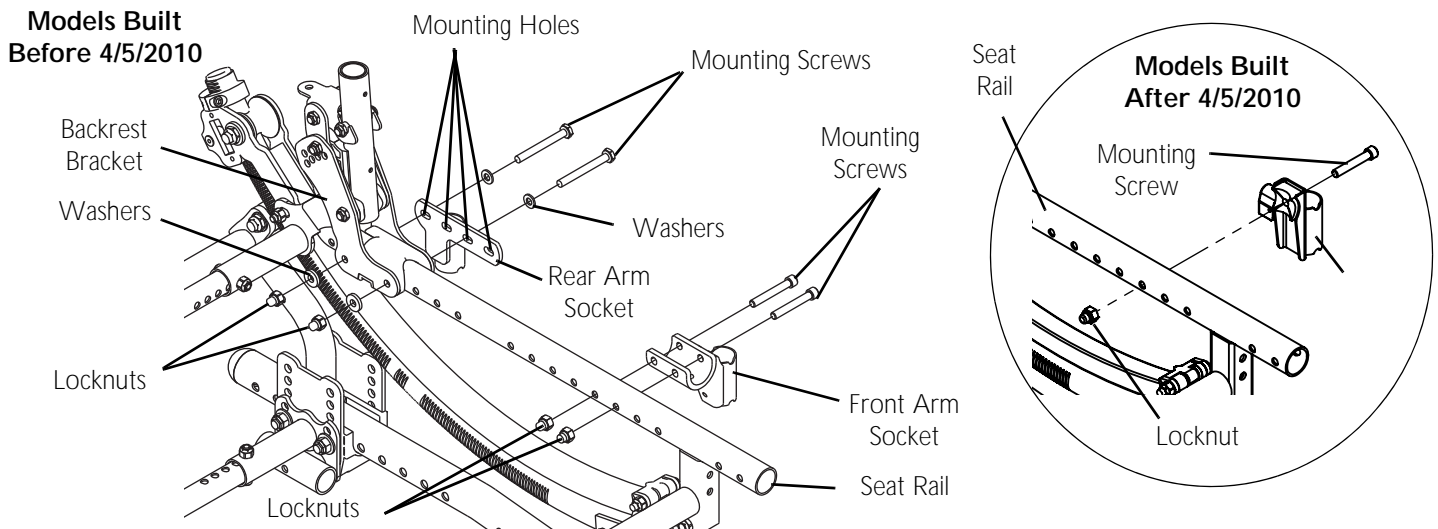
## Adjusting the Depth of the Non Flip Back Two Point Arms

*NOTE: For this procedure, refer to FIGURE 5.2.*

1. Remove the arms. Refer to the owner's manual, p/n 1154295.
2. Remove the rear arm socket. Refer to [Remove Rear and/or Front Arm Socket](#) on page 21.
3. Secure the rear arm socket and seat positioning strap (if applicable), forward or back, onto the backrest bracket using the desired set of mounting holes with two mounting screws, washers, and locknuts. Tighten securely.
4. Remove the front arm socket. Refer to [Remove Rear and/or Front Arm Socket](#) on page 21.

*NOTE: When performing STEP 5, ensure to match the adjustment of the rear arm socket so that the armrest will align properly into the arm sockets*

5. Secure the front arm socket to the seat rail, forward or back, with two mounting screws and locknuts. Tighten securely
6. Repeat STEPS 2-5 for the remaining front/rear arm sockets.



NOTE: Front and rear arm sockets shown in low arm height position. High arm height position adjusts in the same manner.

FIGURE 5.2 Adjusting the Depth of the Non Flip Back Two Point Arms

## Remove/Install Flip Back Two Point Arms

NOTE: For this procedure, refer to FIGURE 5.3 on page 24.

### Preparation

1. Remove the armrests. Refer to the owner's manual, p/n 1154295.
2. Perform one of the following:
  - For chairs equipped with seat pan - remove the seat pan from the wheelchair. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.
  - For chairs equipped with seating system - remove the seating system from the wheelchair. Refer to the Seating Systems owner's manual for installing/removing procedures.

### Remove Rear and/or Front Arm Socket

1. Perform one of the following:

NOTE: Before removing, note position of the rear arm socket in back plate for proper reinstallation.

- A. Rear Arm Socket
  - i. Remove the two mounting screws, washers, seat positioning strap (if applicable) and locknuts that secure the rear arm socket and quick release pin to the backrest bracket.
  - ii. Remove rear arm socket from the wheelchair.
- B. Front Arm Socket
  - i. Remove the mounting screw, washer, and locknut that secures the front arm socket to the seat rail.
  - ii. Remove the front arm socket from the seat rail.

### Install Rear and/or Front Arm Socket

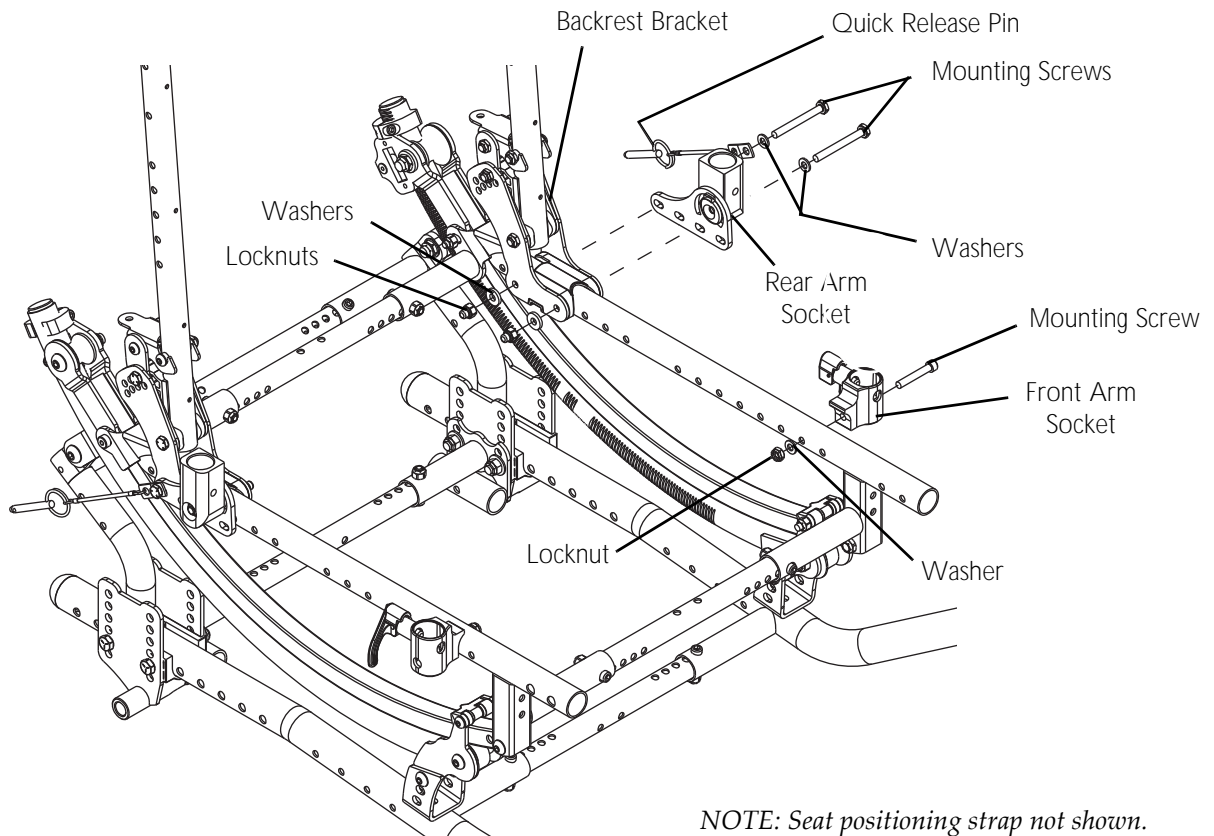
1. Perform one of the following:

- A. Rear Arm Socket
  - i. Secure the rear arm socket, quick release pin, and seat positioning strap (if applicable) to the backrest bracket with two mounting screws, washers, and locknuts. Tighten securely.

- ii. Repeat STEPS 2-5 for opposite side, if necessary.
- B. Front Arm Socket
- i. Secure the front arm socket to the seat rail with one mounting screw, washer and locknut. Tighten securely.

## Reinstallation

1. Perform one of the following:
  - For chairs equipped with seat pan - Install the seat pan onto the wheelchair. Refer to [Install the Seat Pan](#) on page 58.
  - For chairs equipped with seating system - Remove the seating system from the wheelchair. Refer to the Seating Systems owner's manual for installing/removing procedures.



**FIGURE 5.3** Remove/Install Flip Back Two Point Arms

## Adjusting the Depth of the Flip Back Two Point Arms

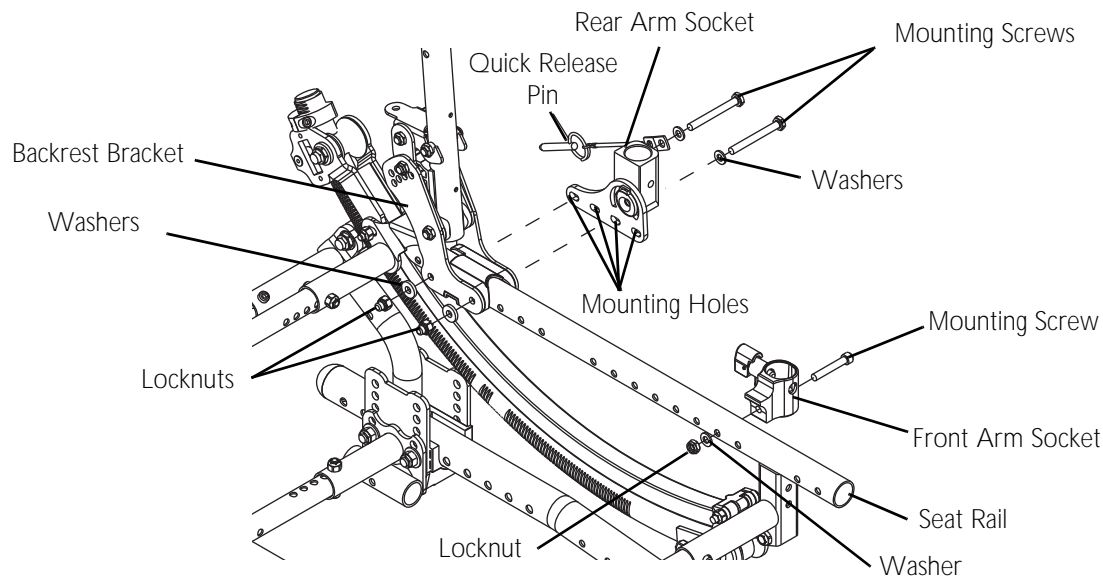
*NOTE: For this procedure, refer to FIGURE 5.4 on page 25.*

1. Remove the arms. Refer to the owner's manual, p/n 1154295.
2. Remove the rear arm socket. Refer to [Remove/Install Flip Back Two Point Arms](#) on page 23.
3. Secure the rear arm socket, quick release pin, and seat positioning strap (if applicable), forward or back, onto the backrest bracket using the desired set of mounting holes with two mounting screws, washers, and locknuts. Tighten securely.
4. Remove the front arm socket. Refer to [Remove/Install Flip Back Two Point Arms](#) on page 23.

*NOTE: When performing STEP 5, ensure to match the adjustment of the rear arm socket so that the armrest will align properly into the arm sockets.*

5. Secure the front arm socket to the seat rail, forward or back, with one mounting screw, washer, and locknut. Tighten securely.
6. Repeat STEPS 2-5 for the remaining front/rear arm sockets.





**FIGURE 5.4** Adjusting the Depth of the Flip Back Two Point Arms

## Adjusting the Height Range for the Non Flip Back Two Point Arms

*NOTE: For this procedure, refer to FIGURE 5.5 on page 26.*

### Converting from High Arm Height Range to Low Arm Height Range

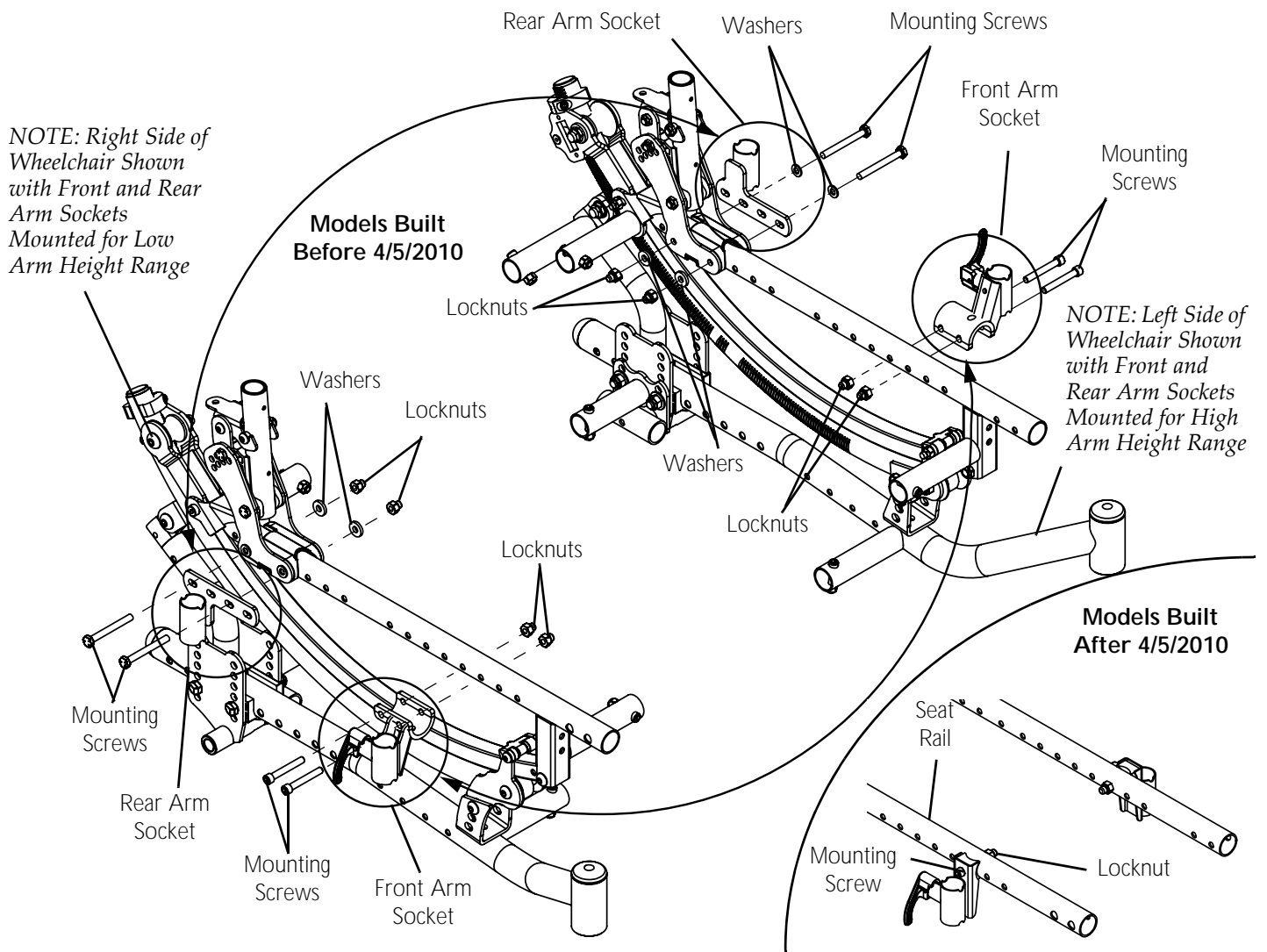
*NOTE: The mounting positions of the front and rear arm sockets used to obtain the high arm height range will now be mounted on the opposite side of the wheelchair in the inverse position to obtain the low arm height range.*

1. Remove rear arm sockets and front arm sockets. Refer to Remove/Install Non Flip Back Two Point Arms on page 21.
2. Install rear arm socket on right side backrest bracket as shown.
3. Secure rear arm socket to backrest bracket with two mounting screws, washers, and locknuts. Tighten securely.
4. Install front arm socket on right side seat rail as shown.
5. Secure front arm socket to seat rail with mounting screw(s) and locknut(s). Tighten securely.
6. Repeat STEPS 2-5 for left side of wheelchair.

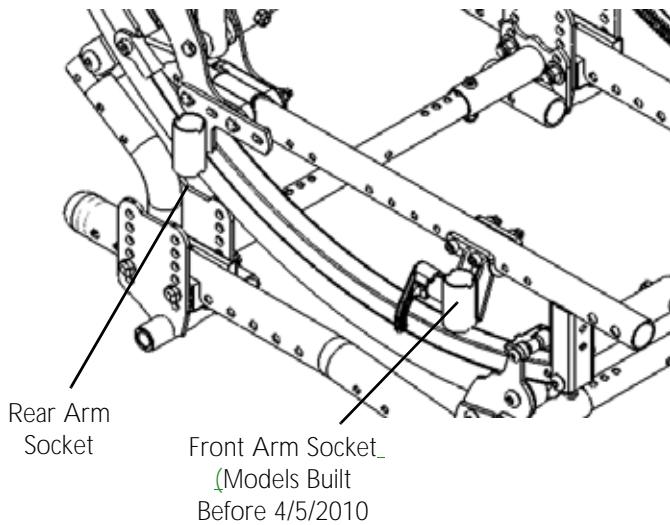
### Converting from Low Arm Height Range to High Arm Height Range

*NOTE: The mounting positions of the front and rear arm sockets used to obtain the low arm height range will now be mounted on the opposite side of the wheelchair in the inverse position to obtain the high arm height range.*

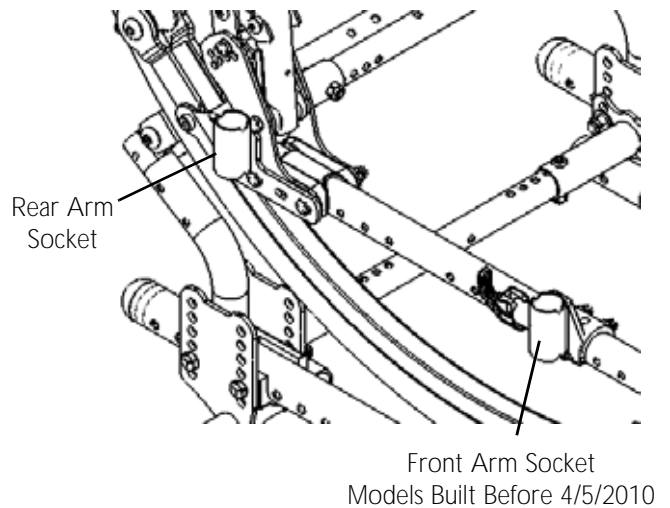
1. Remove rear arm sockets and front arm sockets. Refer to Remove/Install Non Flip Back Two Point Arms on page 21
2. Install rear arm socket on left side backrest bracket as shown.
3. Secure rear arm socket to backrest bracket with two mounting screws, washers, and locknuts. Tighten securely.
4. Install front arm socket on left side seat rail as shown.
5. Secure front arm socket to seat rail with mounting screw(s) and locknut(s). Tighten securely.
6. Repeat STEPS 2-5 for left side of wheelchair.



**DETAIL "A" - ASSEMBLED VIEW OF ARM SOCKETS MOUNTED FOR LOW ARM HEIGHT RANGE**



**DETAIL "B" - ASSEMBLED VIEW OF ARM SOCKETS MOUNTED FOR HIGH ARM HEIGHT RANGE**



**FIGURE 5.5** Adjusting the Height Range for the Non Flip Back Two Point Arms

## Replacing/Repositioning Cantilever Arm Locking Lever

### CAUTION

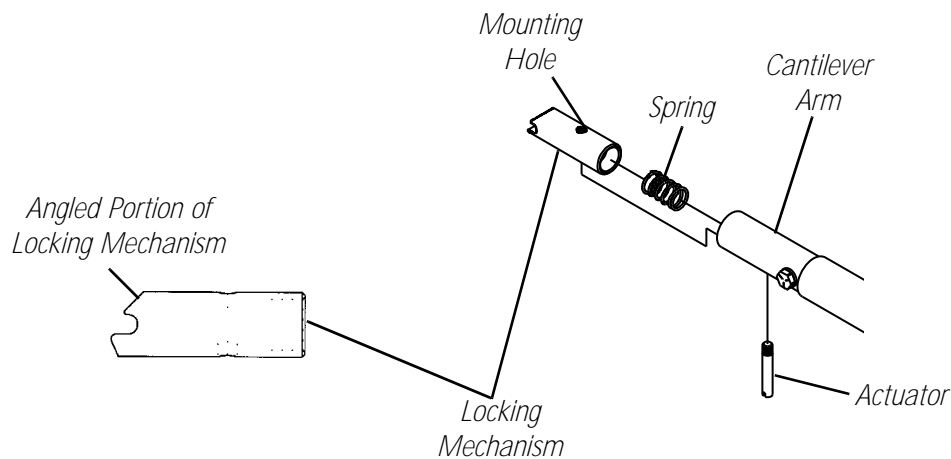
The locking mechanism is spring loaded. Place your free hand over the locking mechanism to prevent the parts from springing out of the cantilever arm.

*NOTE: For this procedure, refer to FIGURE 5.6.*

1. Flip the cantilever arm up and out of the way.
2. Unscrew the actuator from the locking mechanism.
3. Remove the locking mechanism and spring from the cantilever arm.

*NOTE: Inspect the spring for damage and replace if necessary.*

4. Slide the new locking mechanism and spring into the cantilever arm.
5. Position the angled portion of the locking mechanism in one of two ways (Detail "A"):
  - Angled Portion Facing Up - Arm will flip up.
  - Angled Portion Facing Down - Arm will flip down.
6. Push and hold the locking mechanism into the cantilever arm.
7. Screw the actuator into the locking mechanism mounting hole.
8. Flip the cantilever arm up/down to lock in place.
9. Pull up/down on the cantilever arm to ensure it has locked in place.



**FIGURE 5.6** Replacing/Repositioning Cantilever Arm Locking Lever

## Installing T-Arm Sockets

*NOTE: For this procedure, refer to FIGURE 5.7 on page 28.*

1. Position the T-Arm clamp on the seat rail.

*NOTE: The T-Arm socket MUST be positioned on the outside of the wheelchair frame.*

2. Secure T-Arm clamp to seat rail with mounting screws, coved washers and locknuts. Tighten securely.
3. Position the T-Arm socket inserts in the T-Arm socket.
4. Line up the mounting holes in the T-Arm socket with the threaded holes in the T-Arm clamp.
5. While holding the T-Arm socket and the T-Arm clamp together, install the four mounting screws and washers into mounting holes. Tighten loosely.

6. Adjust the T-Arm socket. Refer to the Owner's Manual, part number 1154295.
7. Repeat STEPS 2-7 for opposite side of wheelchair.
8. Install the T-Arm into the T-Arm sockets. Refer to the Owner's Manual, part number 1154295.

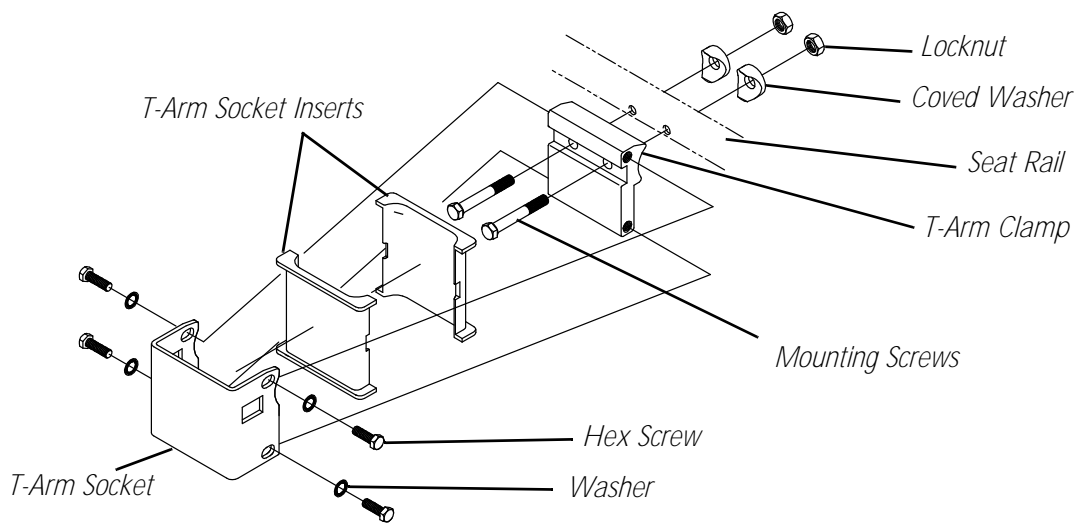


FIGURE 5.7 Installing T-Arm Sockets

## Replacing the Locking Lever - T-Arms

*NOTE: For this procedure, refer to FIGURE 5.8 on page 29.*

1. Remove the T-Arm from the wheelchair. Refer to the owner's manual, part number 1154295.
2. Remove the mounting bolt and locknut that secure the existing locking lever to the bottom bracket.

### CAUTION

**The locking lever is spring loaded. Place your free hand over the locking lever to prevent the parts from springing off of the bottom bracket.**

3. Remove the existing locking lever and spring from the bottom bracket.

*NOTE: Inspect the spring and replace if necessary.*

4. Position the spring on the bottom bracket as shown in FIGURE 5.8.
5. Position the new locking lever onto the spring and the bottom bracket.

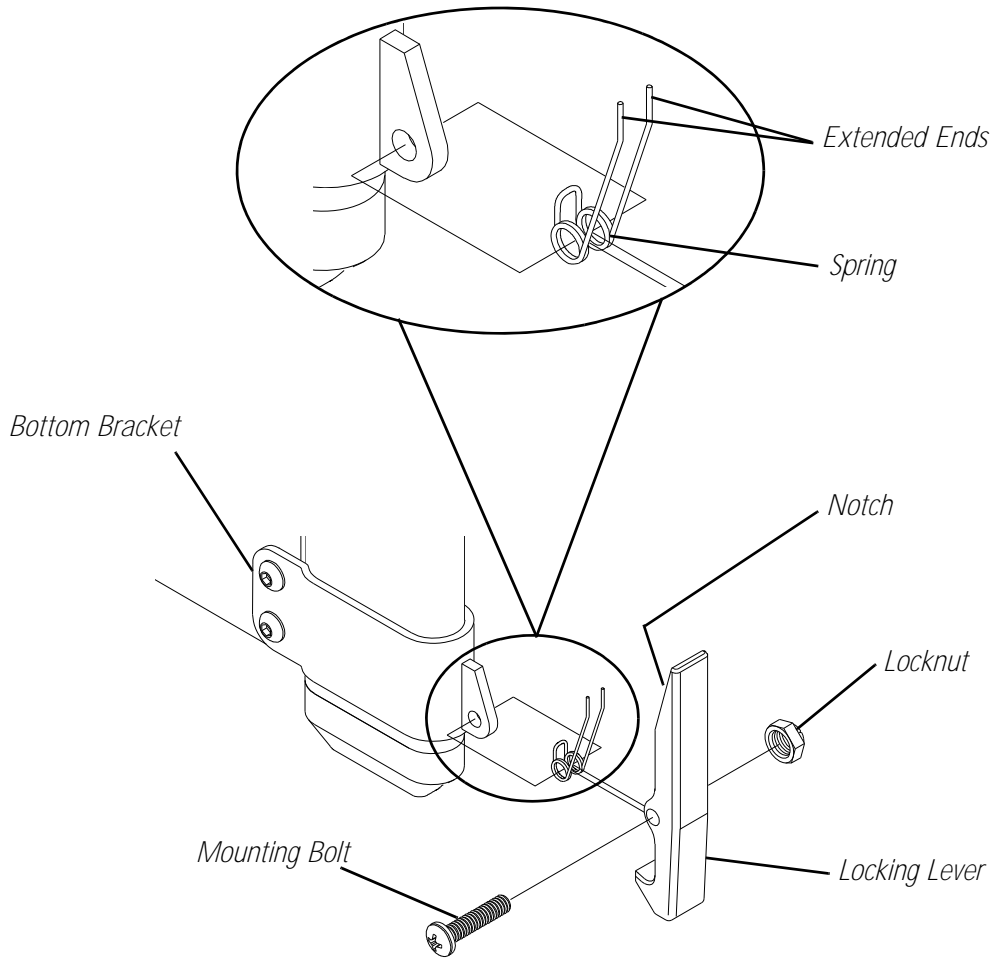
*NOTE: Make sure the two extended ends of the spring are inside the notch in the locking lever.*

6. Line up the mounting holes in the new locking lever, spring and bottom bracket.

### ⚠ WARNING

**DO NOT over tighten the locknut that secures the locking lever to the bottom bracket. Over tightening this locknut will prevent the locking lever from operating properly, possibly causing injury.**

7. Install mounting bolt and tighten securely with locknut.
8. Install the T-Arm onto the wheelchair. Refer to the Owner's Manual, part number 1154295.



**FIGURE 5.8** Replacing the Locking Lever - T-Arms

## SECTION 6—BACK

**⚠ WARNING**

After ANY adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

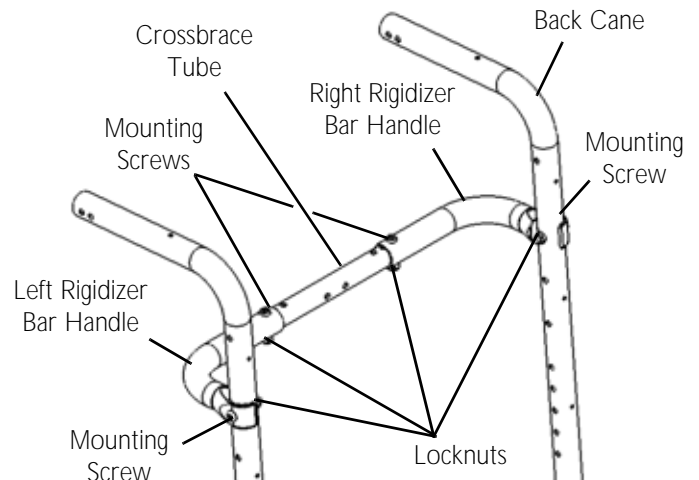
## Removing/Installing the Rigidizer Bar

*NOTE: For this procedure, refer to FIGURE 6.1.*

1. Remove the two mounting screws and locknuts that secures the rigidizer bar to the back canes.
2. Secure the rigidizer bar near the top of the back canes with two mounting screws and locknuts. Tighten securely.

## Adjusting the Width of the Rigidizer Bar

1. Remove the rigidizer bar. Refer to [Removing/Installing the Rigidizer Bar](#) on page 30.
2. Remove the two mounting screws and locknuts that secures the left and right rigidizer bar handles to the crossbrace tube.
3. Lengthen or shorten the rigidizer bar by securing the left/right rigidizer bar handles to the desired mounting holes in the crossbrace tube. Tighten securely.



*NOTE: Rigidizer bar is the assembly of the left and right rigidizer bar handles and the crossbrace tube.*

**FIGURE 6.1** Removing/Installing the Rigidizer Bar and Adjusting the Width of the Rigidizer Bar

## Removing/Installing Back Canes

*NOTE: For this procedure, refer to FIGURE 6.2 on page 31.*

### Removing

1. Remove the trigger release lever. Refer to [Removing/Installing the Trigger Release Lever with Cable](#) on page 97.
2. Perform one of the following:
  - Fixed Back - Remove the two mounting screws, four covered washers, and two locknuts that secure the back cane to the backrest brackets.
  - Fold Down Back -
    - i. Remove the mounting screw, spacers, and locknuts that secures the back cane in place against the latch.
    - ii. Remove the mounting screw, covered washers, and locknut that secures the back cane to the backrest brackets.

## Installing

1. Perform one of the following:
  - Fixed Back -
    - i. Secure the back cane to the backrest brackets with two mounting screws, four covered washers, and two locknuts. Tighten securely.
  - Fold Down Back -
    - i. Secure the back cane to the backrest brackets with mounting screw, covered washers, and locknuts. Tighten securely.
    - ii. Secure the back cane against the latch with a mounting screw, two spacers, two covered washers, and locknut. Tighten securely.

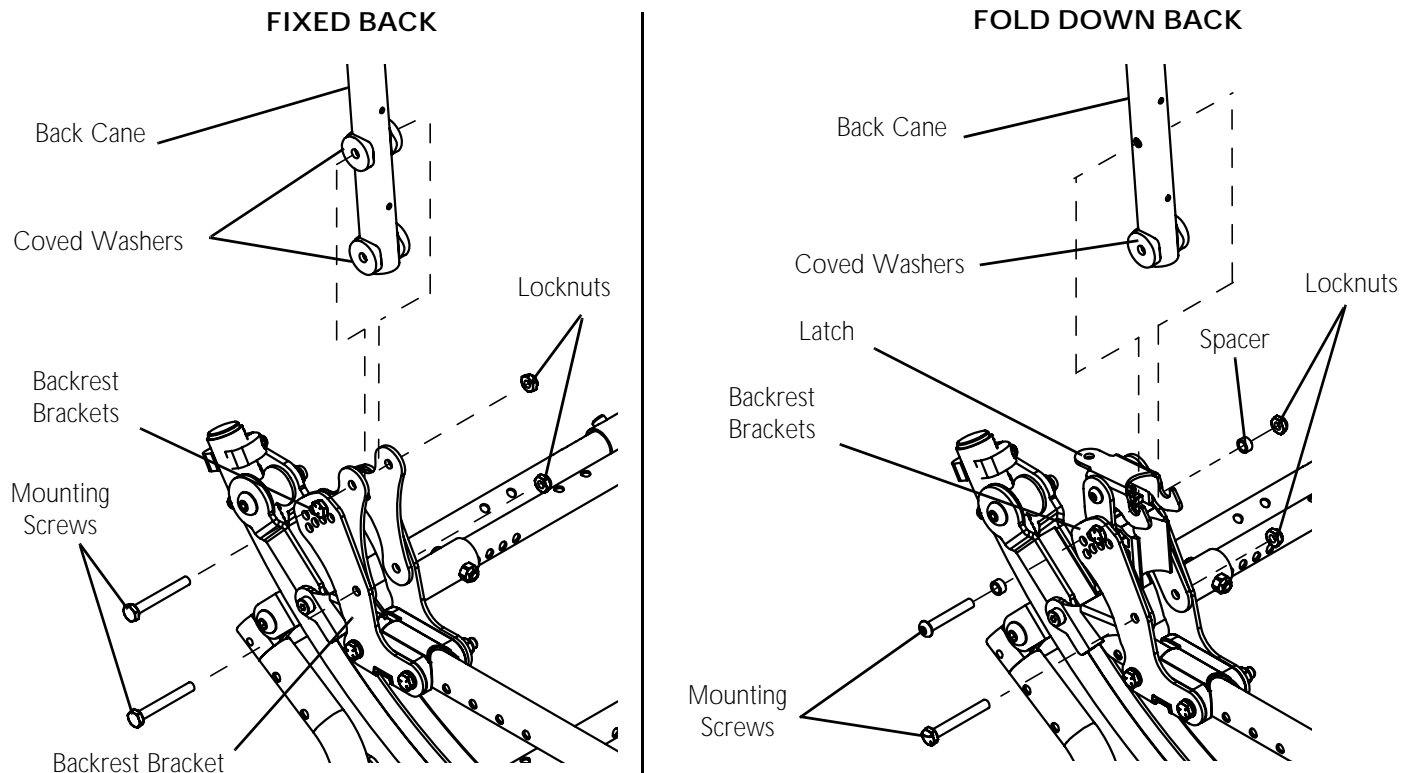


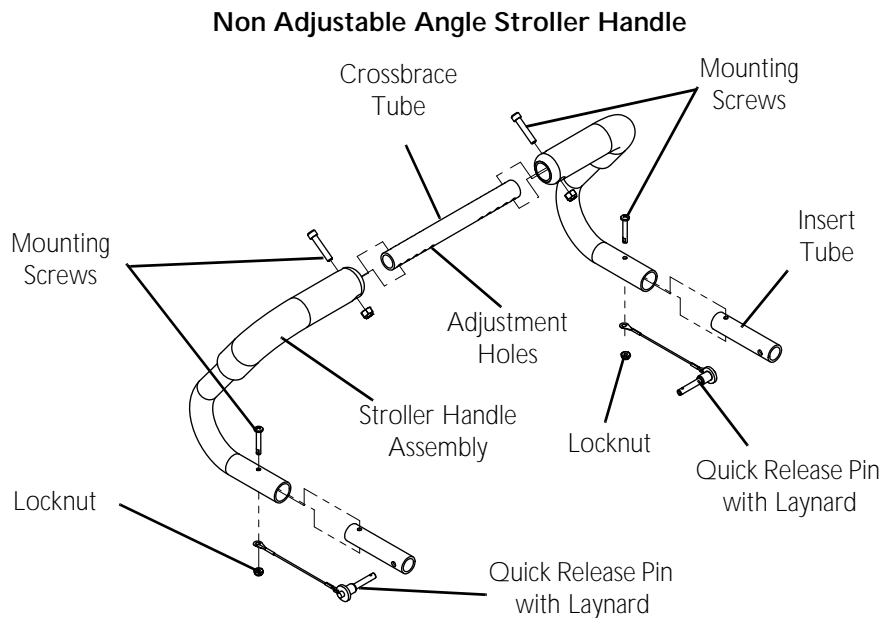
FIGURE 6.2 Removing/Installing Back Canes

## Assembling/Disassembling the Stroller Handle

### Non Adjustable Angle Stroller Handle

*NOTE: For this procedure, refer to FIGURE 6.3 on page 32.*

1. Secure the crossbrace tube to the left and right stroller handle assemblies at the desired width with two mounting screws and locknuts. Tighten securely.
2. Install insert tubes into left and right stroller handle assemblies.
3. Secure quick release pin with lanyard to stroller handle assemblies with mounting screw and locknut. Tighten securely.
4. Install the stroller handle. Refer to [Installing/Removing Non-Adjustable Angle Stroller Handles](#) on page 33.
5. Disassemble by reversing STEPS 1-4.



**FIGURE 6.3** Assembling/Disassembling the Stroller Handle - Non Adjustable Angle Stroller Handle

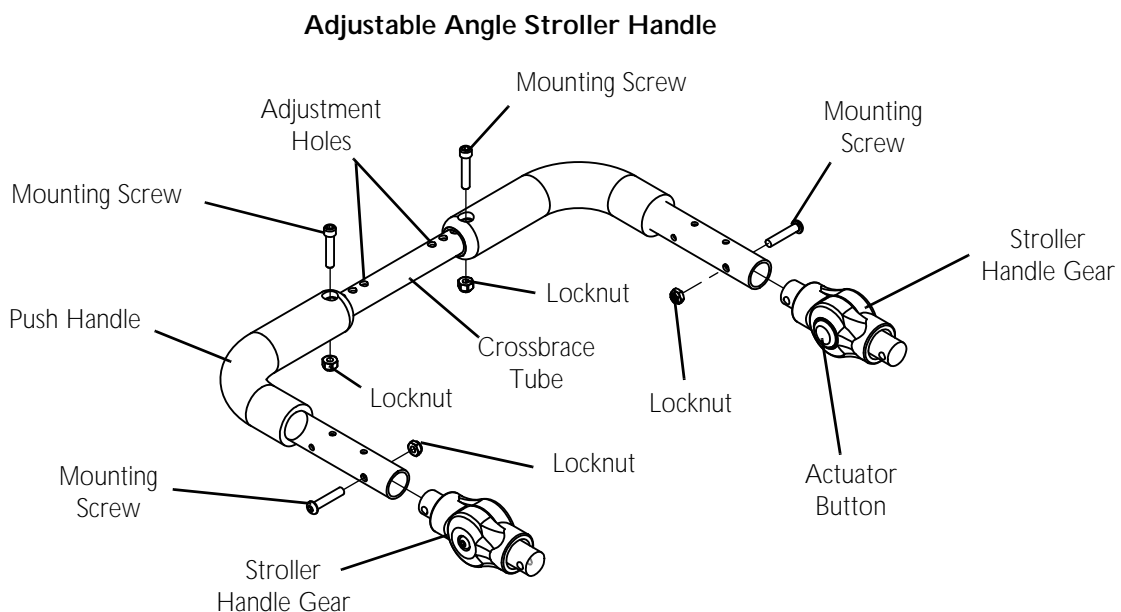
### Adjustable Angle Stroller Handle

*NOTE: For this procedure, refer to FIGURE 6.4.*

1. Secure the crossbrace tube to the push handle assemblies at the desired width with two mounting screws and locknuts. Tighten securely.

*NOTE: When performing STEP 2 the actuator button can be mounted toward the inside or outside of the wheelchair.*

2. Secure one stroller handle gear to each push handle assembly with mounting screw and locknut. Tighten securely.
3. Install the stroller handle. Refer to [Installing/Removing Adjustable Angle Stroller Handle](#) on page 33
4. Disassemble by reversing STEPS 1-3.



**FIGURE 6.4** Assembling/Disassembling the Stroller Handle - Adjustable Angle Stroller Handle



## Installing/Removing Non-Adjustable Angle Stroller Handles

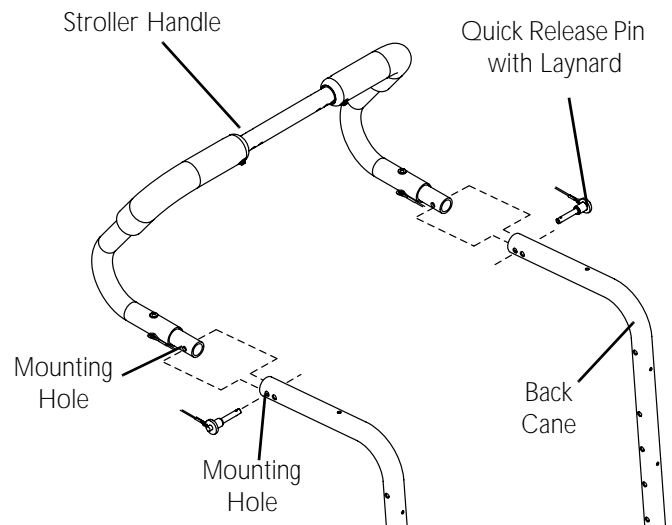
*NOTE: For this procedure, refer to FIGURE 6.5.*

### Installing

1. Remove the plug buttons from both back canes, if necessary.
2. Slide non adjustable angle stroller handle into the back canes.
3. Align the mounting holes of the non adjustable angle stroller handle and the back canes.
4. Insert the quick release pin through the back cane and non adjustable angle stroller handle.
5. Repeat STEP for remaining back cane.
6. Pull on the non adjusted angle stroller handle to make sure it is locked securely in place.

### Removing

1. Remove the quick release pins that secure the non adjustable angle stroller handle to the back cane.
2. Remove the non adjustable angle stroller handle from the wheelchair.



**FIGURE 6.5** Installing/Removing Non-Adjustable Angle Stroller Handles

## Installing/Removing Adjustable Angle Stroller Handle

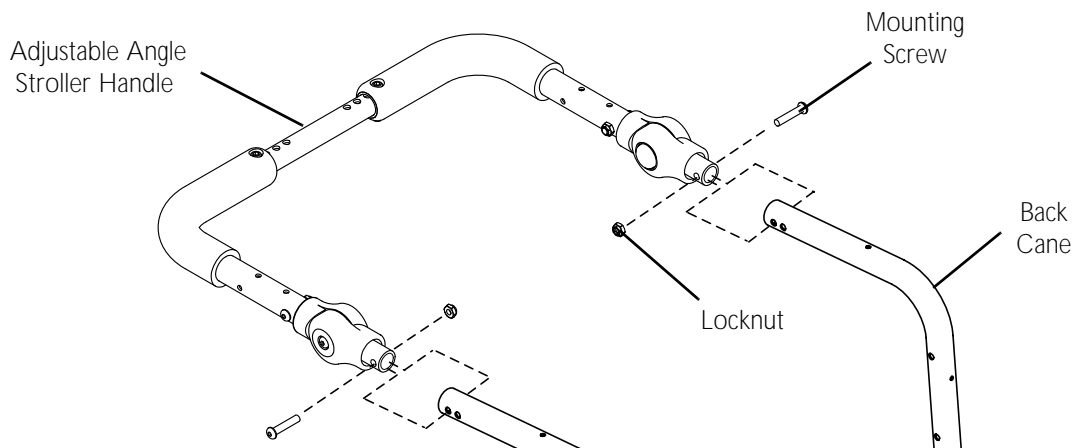
### Installing

*NOTE: For this procedure, refer to FIGURE 6.6.*

1. Position each stroller handle gear inside each back cane.
2. Secure stroller handle gear to the back canes with two mounting screws and locknuts. Tighten securely.

### Removing

1. Remove the two mountings screws and locknuts that secure the stroller handle gears to the back canes.
2. Remove the adjustable angle stroller handle from the back canes.



**FIGURE 6.6** Installing/Removing Adjustable Angle Stroller Handle

# SECTION 7—FRAME

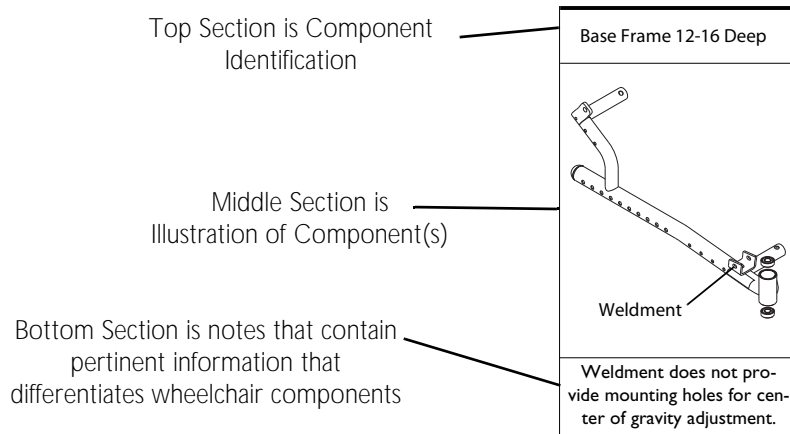
## ⚠ WARNING

After ANY adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

### Frame Identification

NOTE: For this procedure, refer to FIGURE 7.1 on page 34 through FIGURE 7.6 on page 38.

#### How to read the following charts



Base Frame that provides seat depths ranging from 12 inches to 16 inches	Base Frame that provides seat depths ranging from 15 inches to 19 inches	Base Frame that provides seat depths ranging from 18 inches to 22 inches
<p>Weldment See Note A</p>	<p>Weldment See Note B</p>	<p>Weldment See Note B</p>
<p><b>NOTE:</b></p> <p>A. Weldment does not provide mounting holes for center of gravity adjustment.</p> <p>B. Weldment does provide mounting holes for center of gravity adjustment.</p>		

FIGURE 7.1 Available Base Frame Assemblies

12 -16 Inch Deep Seat Frame Assembly			
Chair equipped with Hand Tilt		Chair equipped with Foot Tilt	
Without Contracture Platform	With Contracture Platform	Without Contracture Platform	With Contracture Platform
<p><b>NOTE:</b></p> <p>A. The seat frame for 12-16 inch deep frames is a one piece weldment. For 15-19 inch deep frames and 18-22 inch deep frames there are two separate components. The two components are the seat frame and rocker tube.</p> <p>B. This tube is needed for the attachment of front riggings other than contracture platform.</p> <p>C. Separate gear rack is mounted to seat frame on foot tilt only.</p>			

FIGURE 7.2 Available 12-16 Inch Deep Seat Frame Assemblies

15 -19 Inch Deep Seat Frame		18 - 22 Inch Deep Seat Frame	
Without Contracture Platform	With Contracture Platform	Without Contracture Platform	With Contracture Platform
<p><b>NOTE:</b></p> <p>A. This tube is needed for the attachment of front riggings other than contracture platform</p>			

FIGURE 7.3 Available 15-19 Inch and 18-22 Inch Deep Seat Frame Assemblies

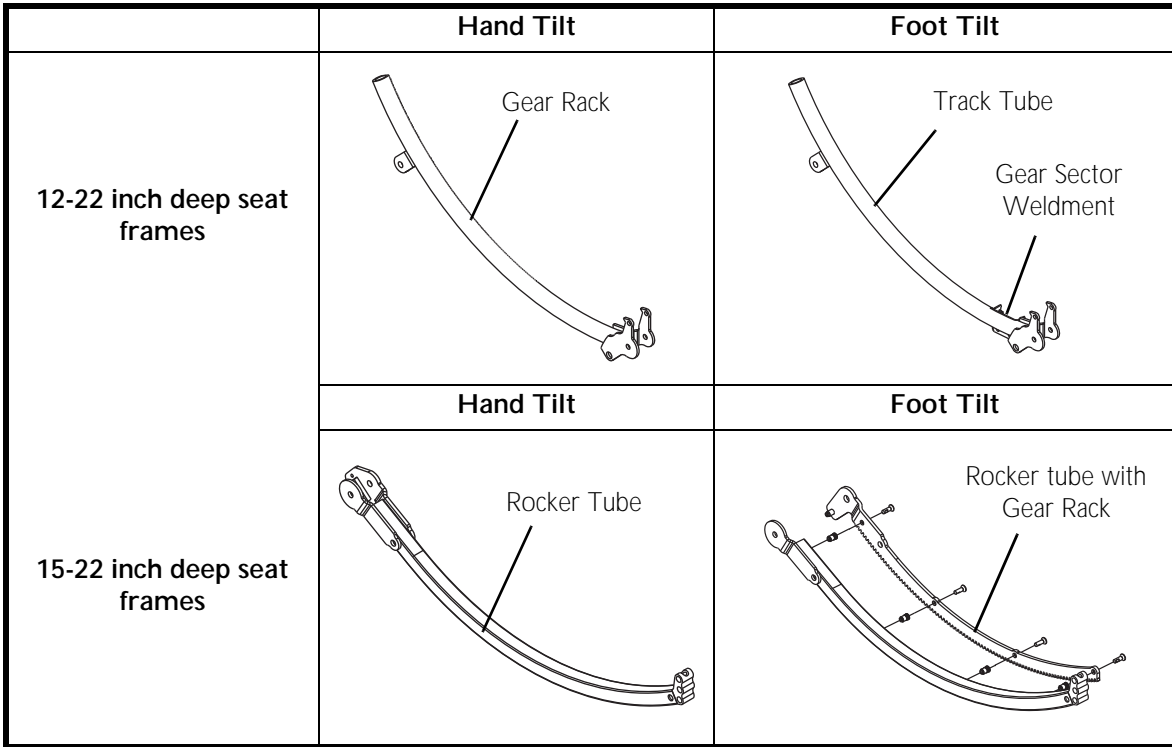
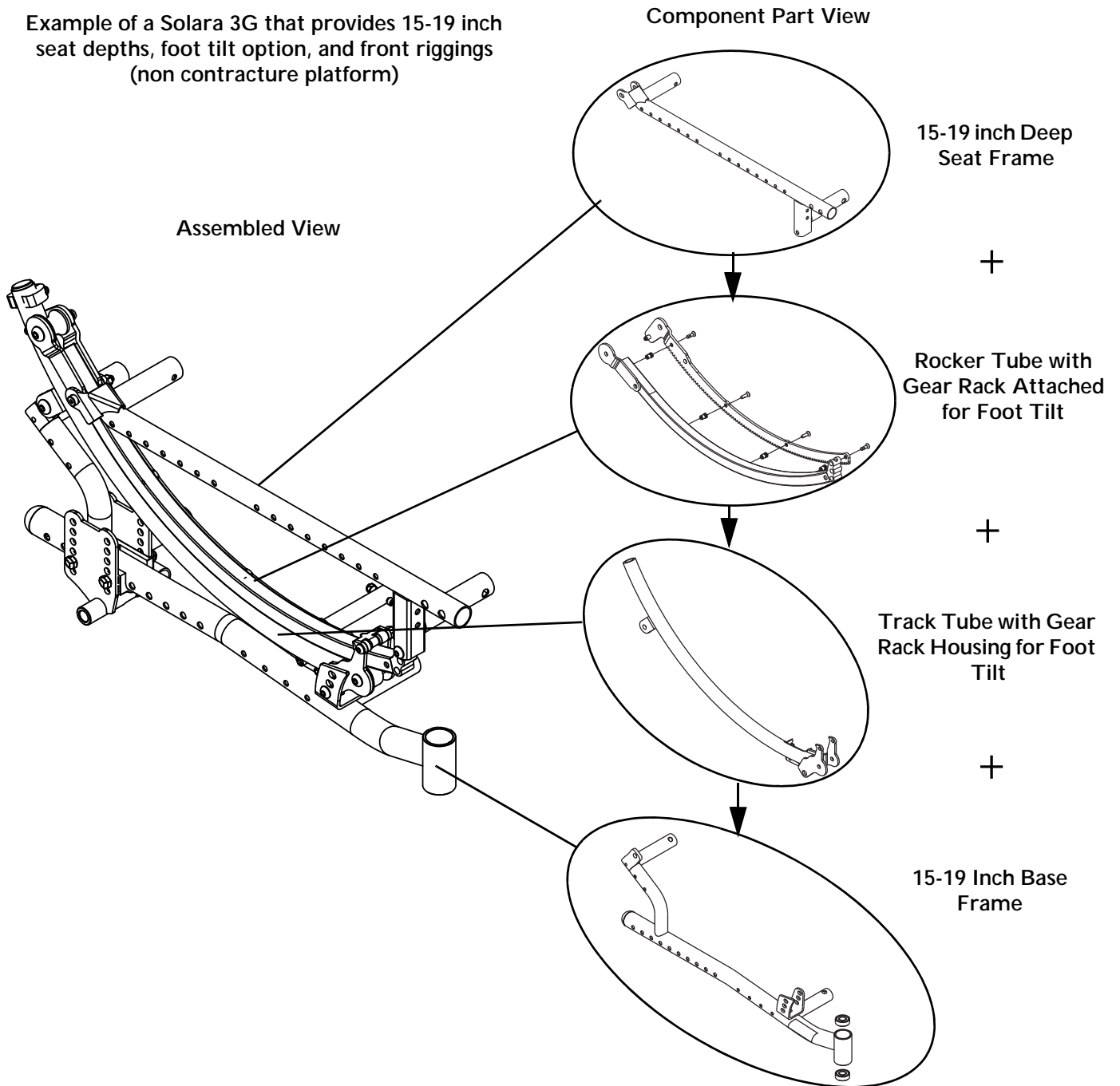


FIGURE 7.4 Available Gear Rack, Track Tube and Rocker Tubes

Example of a Solara 3G that provides 15-19 inch seat depths, foot tilt option, and front riggings (non contracture platform)



**FIGURE 7.5** 15-19 Inch Deep Seat/Base Frame Example

Example of a Solara 3G that provides 12-16 inch seat depths, hand tilt option, and front riggings (non contracture platform)

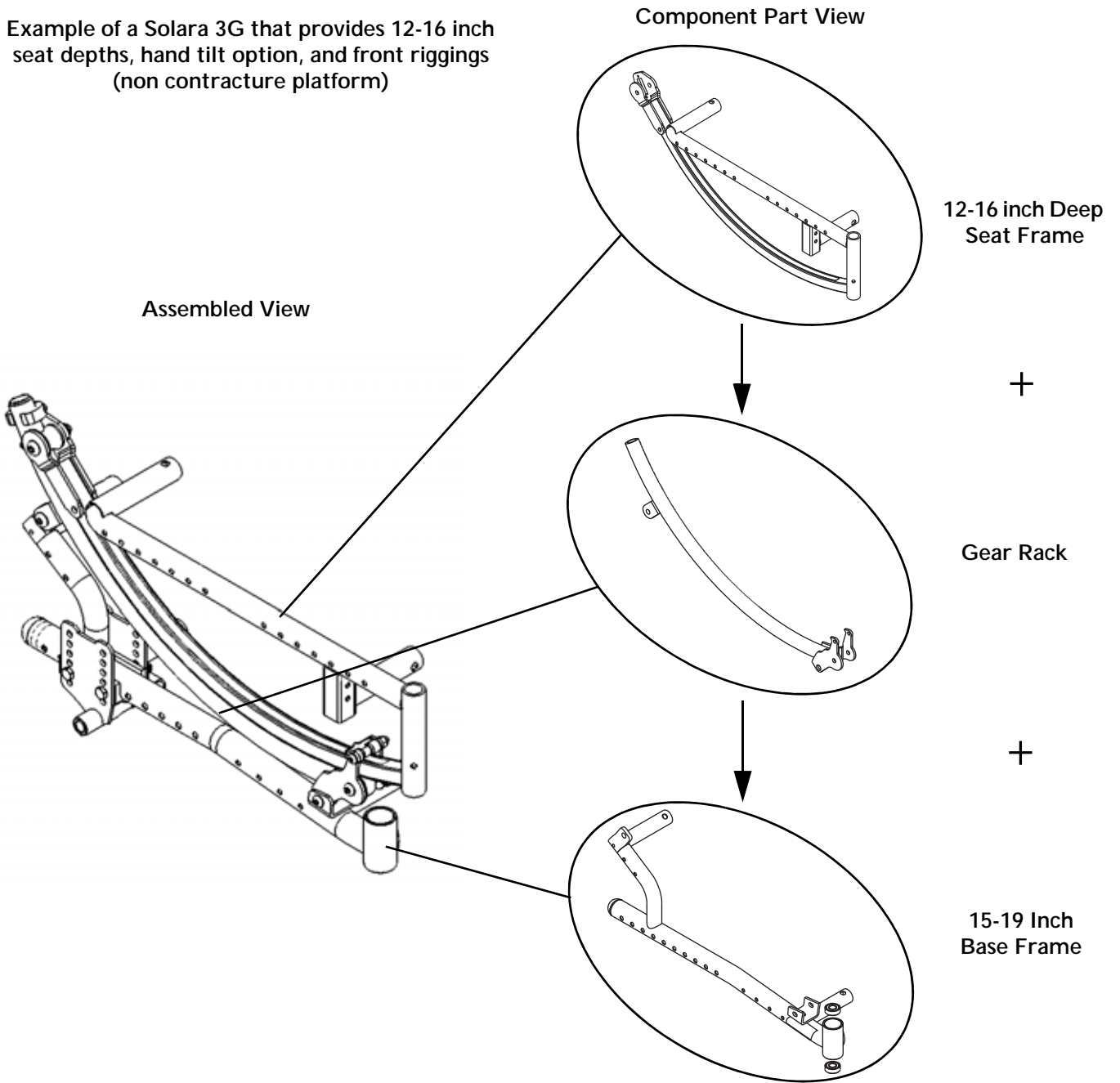


FIGURE 7.6 5-19 Inch Deep Seat/Base Frame Example

## Center of Gravity (COG)

NOTE: For this procedure, refer to FIGURE 7.7.

NOTE: Center of gravity adjustment is only available on 15-19 inch deep seat frames and 18-22 inch deep seat frames. Center of gravity adjustment is not available on 12 - 16 inch deep seat frames.

1. Review Detail "A" and the following instructions to understand the available COG mounting hole positions:
  - **FRONT SETTING** - Track tube mounted in the bottom hole of the COG mounting bracket and the seat frame mounted in the top hole of the rocker tube.
  - **MID SETTING** - Track tube mounted in the middle hole of the COG mounting bracket and the seat frame mounted in the middle hole of the rocker tube.
  - **REAR SETTING** - Track tube mounted in the top hole of the COG mounting bracket and the seat frame mounted in the bottom hole of the rocker tube.
2. Remove the front riggings. Refer to the owner's manual, p/n 1154295.
3. Remove the mounting screw and locknut that secures the track tube to the COG mounting bracket.
4. Repeat STEP 1 for opposite side of wheelchair.
5. Secure the track tube in the desired mounting position determined in STEP 1 with mounting screw, bushing, two washers, and locknut. Tighten securely.
6. Repeat STEP 5 for remaining track tube.
7. Remove the mounting screw and washer that secures the seat frame to the rocker tube.
8. Secure the rocker tube in the desired mounting position determined in STEP 1 with mounting screw and washer. Tighten securely.
9. Repeat STEP 8 for remaining rocker tube.

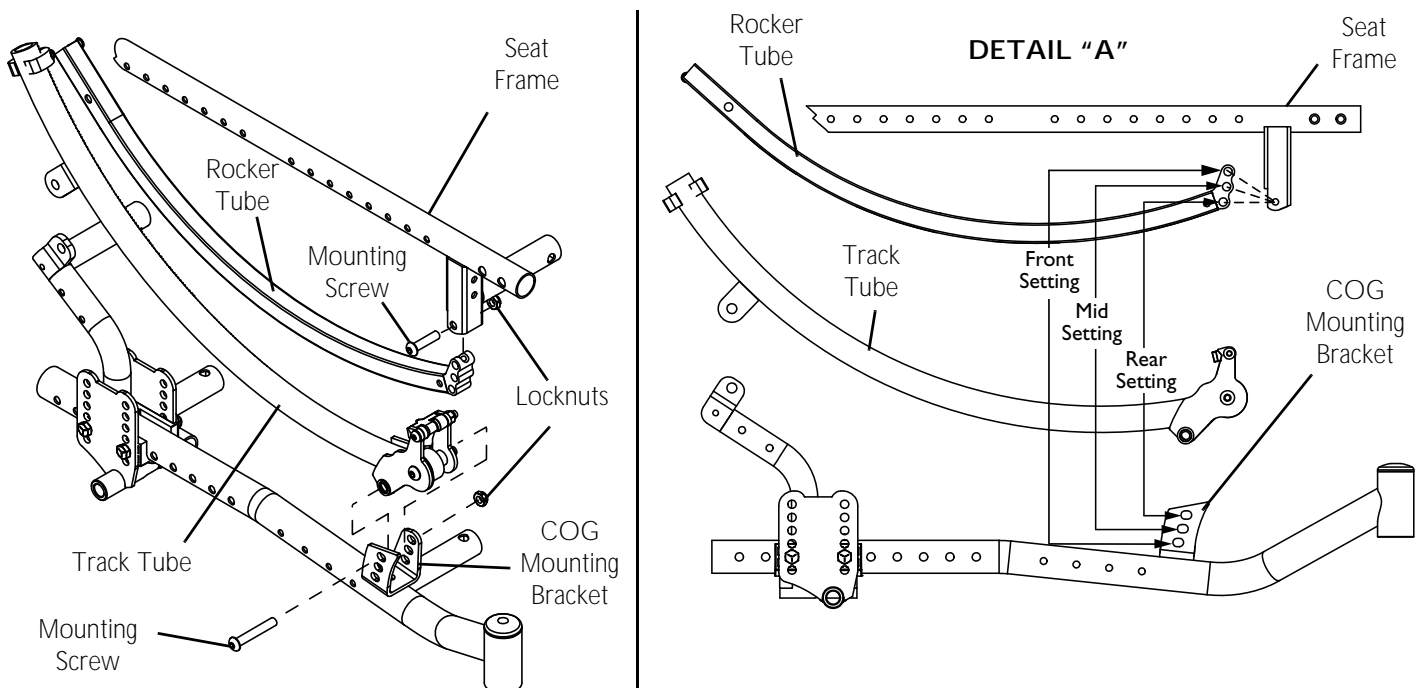


FIGURE 7.7 Center of Gravity (COG)

## Removing/Installing Gear Rack (Foot Tilt)

NOTE: For this procedure, refer to FIGURE 7.8 on page 40.

### Removing

1. Remove the seating system. Refer to the owner's manual, p/n 1154295.
1. Remove the footrests. Refer to the owner's manual, p/n 1154295.
2. Remove the seat pan. Refer to the owner's manual, p/n 1154295.
3. Remove the four  $\frac{1}{2}$  inch mounting screws that secure the gear rack to the rocker tube.
4. Remove the 2 inch mounting screw, washer, and locknut that secures roller and bushing to the gear rack and rocker tube.
5. Remove the  $1\frac{3}{4}$  inch mounting screw and locknut that secures the gear rack to the rocker tube.

### Installing

NOTE: When performing STEP 1, ensure the teeth of the gear rack are aligned with the teeth of the gear sector. See Detail "A".

1. Secure the gear rack to the rocker tube with four  $\frac{1}{2}$  inch mounting screws. Tighten securely.
2. Secure the roller and bushing to the gear rack and rocker tube with one 2 inch mounting screw, washer, and locknut. Tighten securely.
3. Secure the gear rack to the rocker tube with one  $1\frac{3}{4}$  inch mounting screw and locknut. Tighten securely.
4. Install the seat pan. Refer to the owner's manual, p/n 1154295.
5. Install the front riggings. Refer to the owner's manual, p/n 1154295.
6. Install the seating system. Refer to the owner's manual, p/n 1154295.

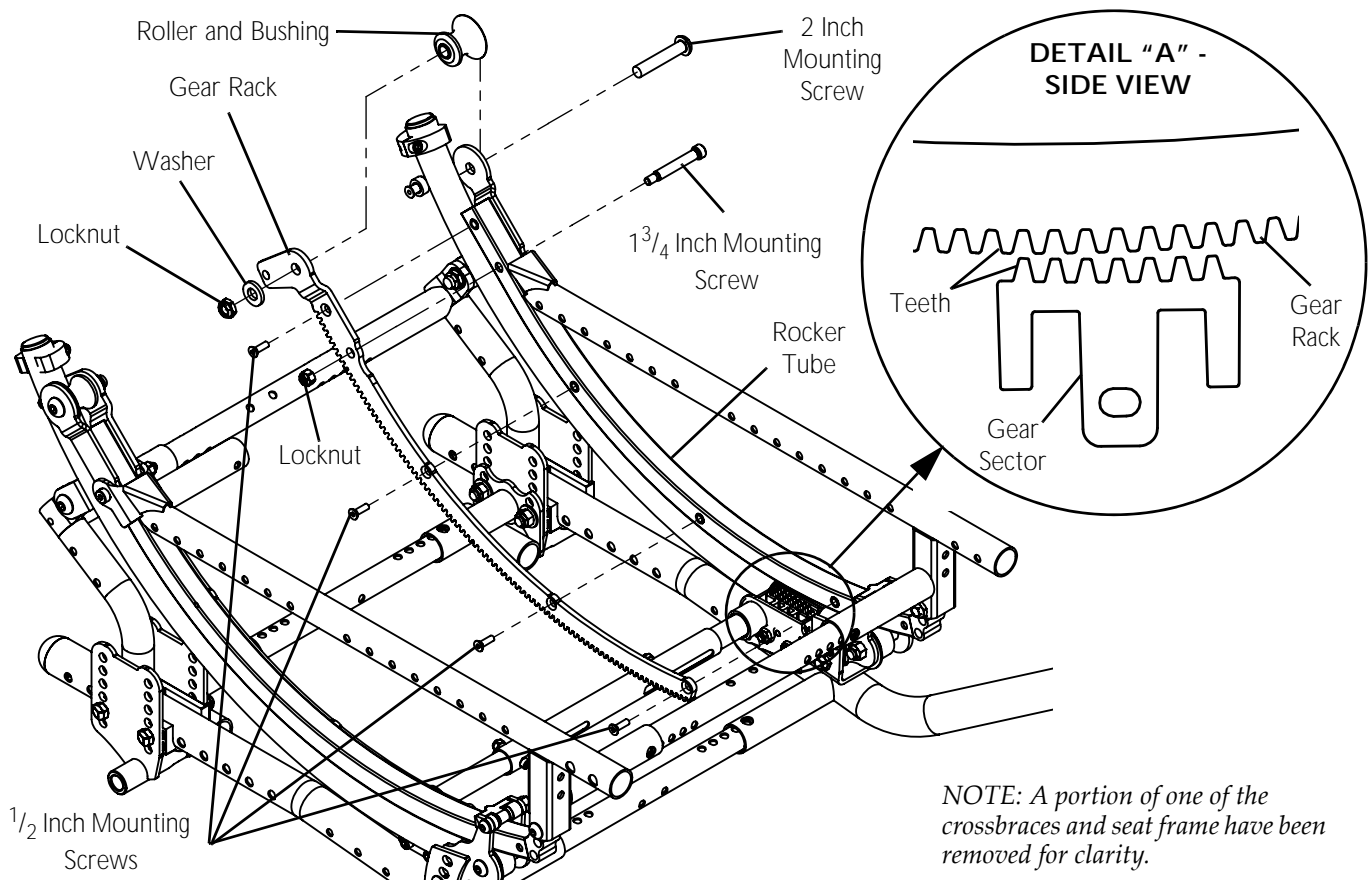


FIGURE 7.8 Removing/Installing Gear Rack (Foot Tilt)



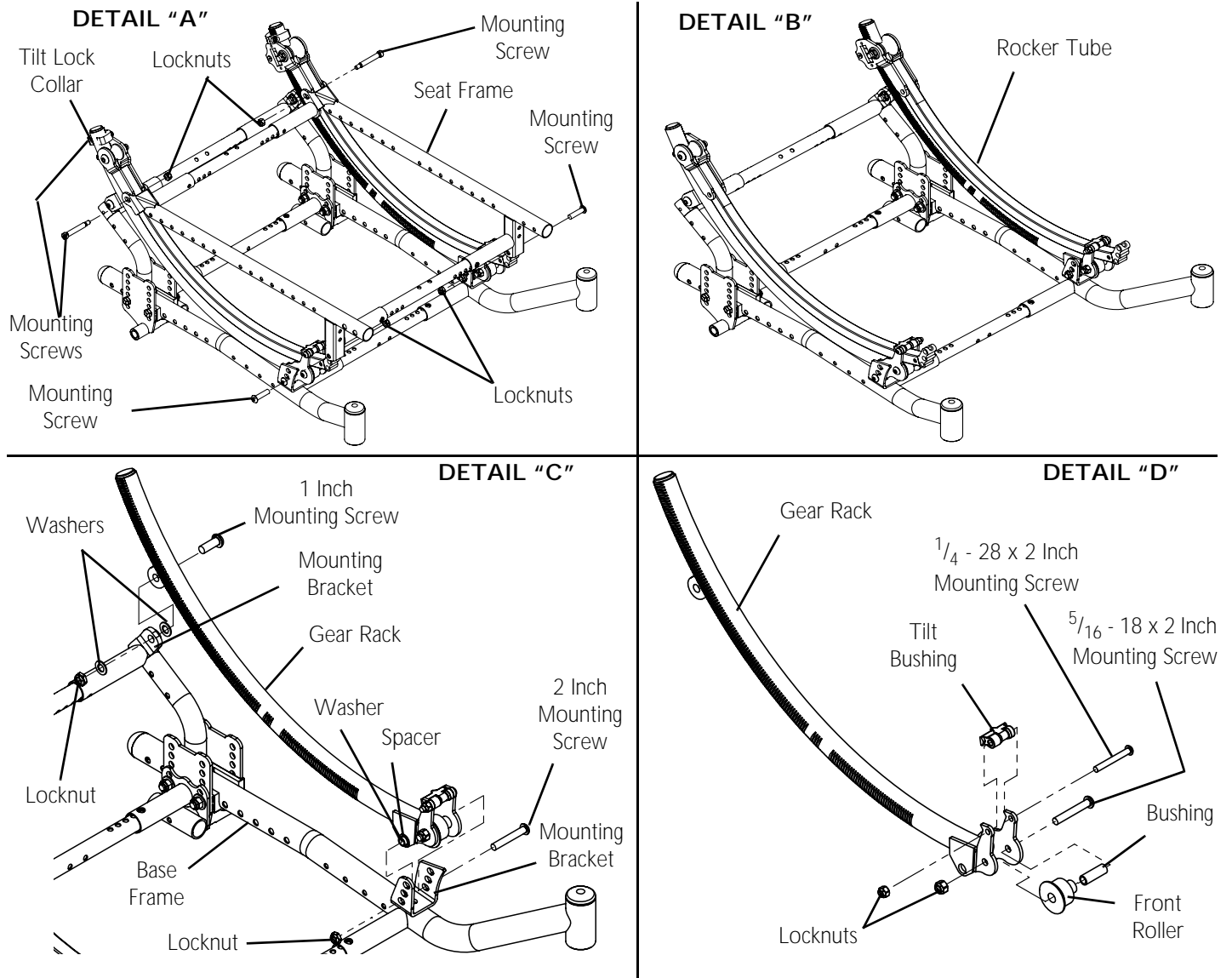
## Removing/Installing the Gear Rack (Hand Tilt)

### Removing Gear Rack for 15-19 inch Deep Seat Frames and 18-22 inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 7.9 on page 42.*

1. Remove the trigger release lever. Refer to Removing/Installing the Trigger Release Lever with Cable on page 97.
2. Remove the seating system. Refer to the owner's manual, p/n 1154295.
3. Remove the front riggings. Refer to the owner's manual, p/n 1154295.
4. Remove the seat pan. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.
5. Remove two mounting screws and locknuts that secure the front of the seat frame to the rocker tubes (Detail "A").
6. Remove the two mounting screws and locknuts that secure the rear of the seat frame to the rocker tubes (Detail "A").
7. Remove the seat frame (Detail "A").
8. Remove the mounting screw that secures the tilt lockout collar to the gear rack (Detail "A").
9. Repeat STEP 8 for remaining tilt lock out collar.
10. Remove the rocker tube from the wheelchair frame (Detail "B").
11. Remove the 2 inch mounting screw, two washers, spacer, and locknut that secures the gear rack to the mounting bracket on the front of the base frame (Detail "C").
12. Remove the 1 inch mounting screw, two washers, and locknut that secures the gear rack to the mounting bracket on the rear of the base frame (Detail "C").
13. Remove the  $\frac{5}{16}$  - 18 x 2 inch mounting screw and locknut that secures the front roller and bushing to the gear rack.
14. Remove the  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut that secures the tilt bushing to the gear rack.

## 15 - 19 INCH DEEP SEAT FRAMES OR 18-22 INCH DEEP SEAT FRAMES



**FIGURE 7.9** Removing Gear Rack for 15-19 inch Deep Seat Frames and 18-22 inch Deep Seat Frames

### Removing Gear Rack for 12-16 inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 7.10 on page 43.*

1. Remove the trigger release lever. Refer to Removing/Installing the Trigger Release Lever with Cable on page 97.
2. Remove the seating system. Refer to the owner's manual, p/n 1154295.
3. Remove the front riggings. Refer to the owner's manual, p/n 1154295.
4. Remove the seat pan. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.
5. Remove the  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut that secures the tilt bushing to the gear rack (Detail "A").
6. Repeat STEP 5 for remaining tilt bushing.
7. Remove the 1 inch mounting screw that secure the tilt lockout collars to the gear rack (Detail "A").
8. Repeat STEP 7 for remaining tilt lockout collar.
9. Slide the seat frame up and off of the gear racks.

10. Remove the 2 inch mounting screw, two washers, spacer, and locknut that secures the gear rack to the mounting bracket on the front of the base frame (Detail "B").
11. Remove the 1 inch mounting screw, two washers, and locknut that secures the gear rack to the mounting bracket on the rear of the base frame (Detail "B").
12. Remove the  $\frac{5}{16}$  - 18 x 2 inch mounting screw and locknut that secures the front roller and bushing to the gear rack (Detail "C").
13. Remove the  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut that secures the tilt bushing to the gear rack (Detail "C").

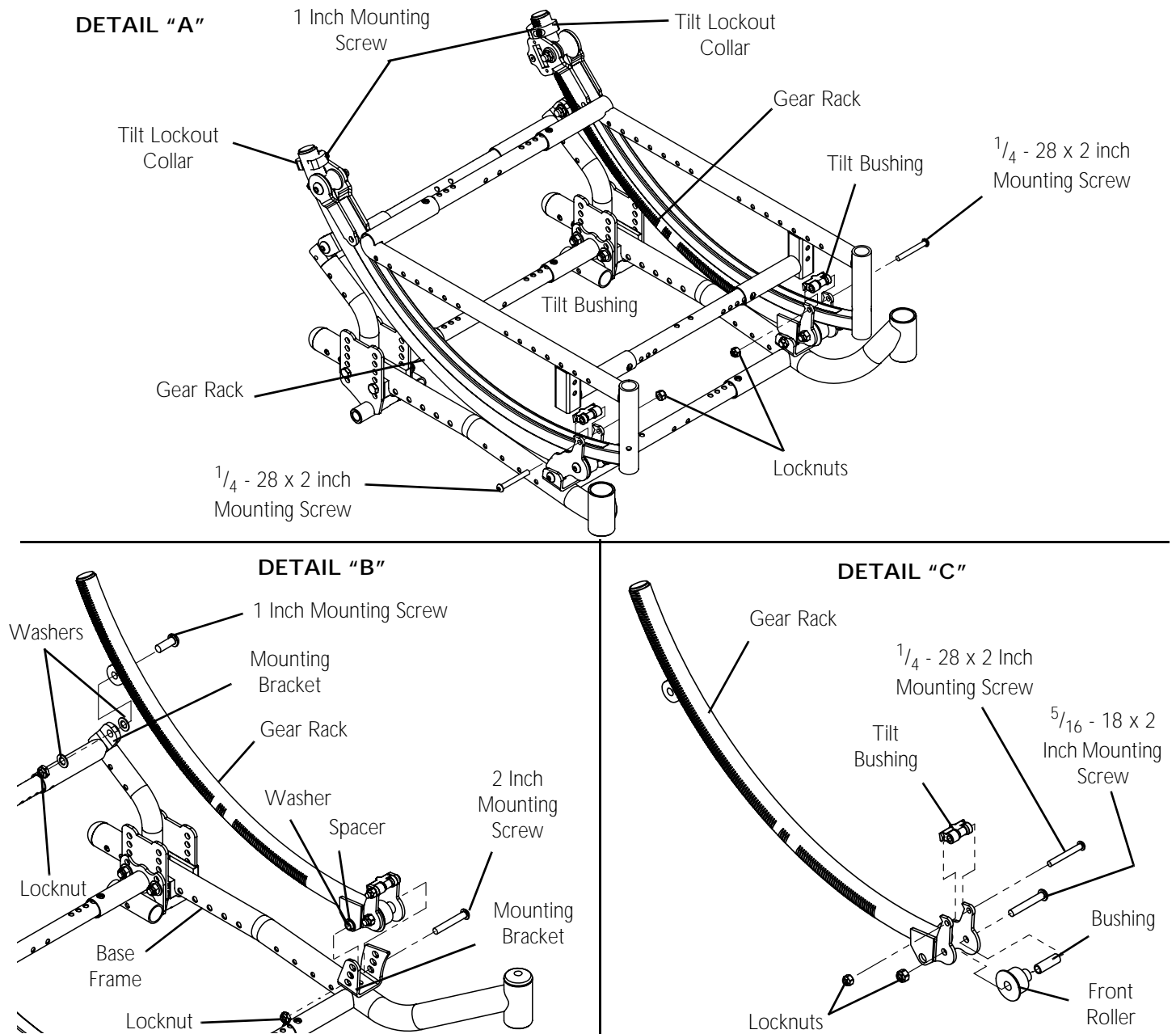


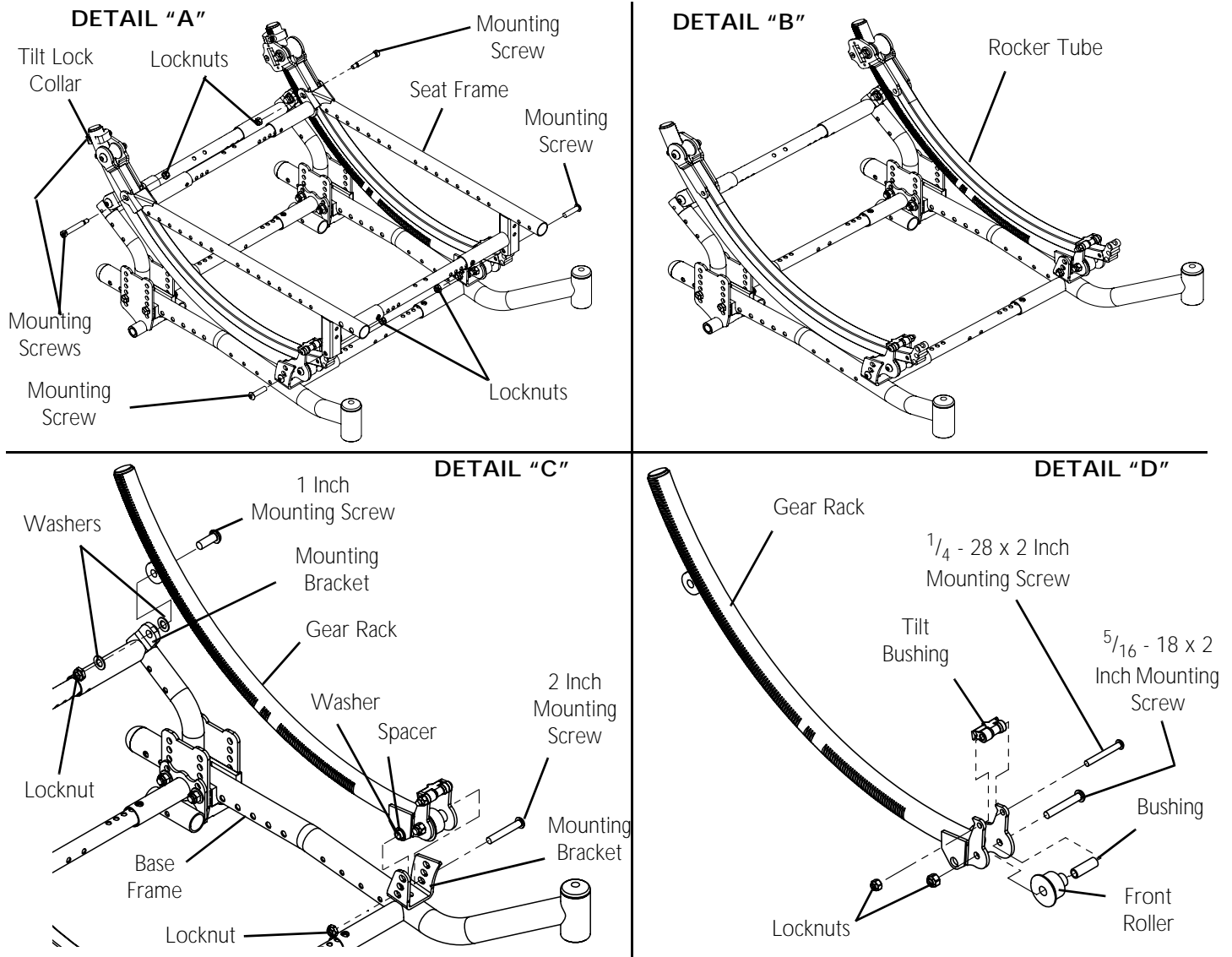
FIGURE 7.10 Removing Gear Rack for 12-16 inch Deep Seat Frames

### Installing Gear Rack for 15-19 inch Deep Seat Frames and 18-22 inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 7.11 on page 45.*

1. Secure the tilt bushing to the gear rack with one  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut (Detail "D"). Tighten securely.
2. Secure the front roller and bushing to the gear rack with one  $\frac{5}{16}$  - 18 x 2 inch mounting screw and locknut (Detail "D"). Tighten securely.
3. Secure the gear rack to the mounting bracket on the rear of the base frame with one 1 inch mounting screw, two washers, and locknut (Detail "C"). Tighten securely.
4. Secure the gear rack to the mounting bracket on the front of the base frame with one 2 inch mounting screw, two washers, spacer, and locknut (Detail "C"). Tighten securely.
5. Install the rocker tube onto the wheelchair frame (Detail "B").
6. Secure the tilt lockout collar to the gear rack with one 1 inch mounting screw (Detail "A").
7. Repeat STEP 6 for remaining tilt lock out collar.
8. Install the seat frame (Detail "A").
9. Secure the rear of the seat frame to the rocker tubes with two 1 inch mounting screws and locknuts (Detail "A"). Tighten securely.
10. Secure the front of the seat frame to the rocker tubes with two 2 inch mounting screws and locknuts (Detail "A") Tighten securely.
11. Install the seat pan. Refer to [Install the Seat Pan](#) on page 58.
12. Install the front riggings. Refer to the owner's manual, p/n 1154295.
13. Install the seating system. Refer to the owner's manual, p/n 1154295.
14. Install the trigger release lever. Refer to [Removing/Installing the Trigger Release Lever with Cable](#) on page 97.

## 15 - 19 INCH DEEP SEAT FRAMES OR 18-22 INCH DEEP SEAT FRAMES



**FIGURE 7.11** Installing Gear Rack for 15-19 inch Deep Seat Frames and 18-22 inch Deep Seat Frames

### Installing Gear Rack for 12-16 inch Deep Seat Frames

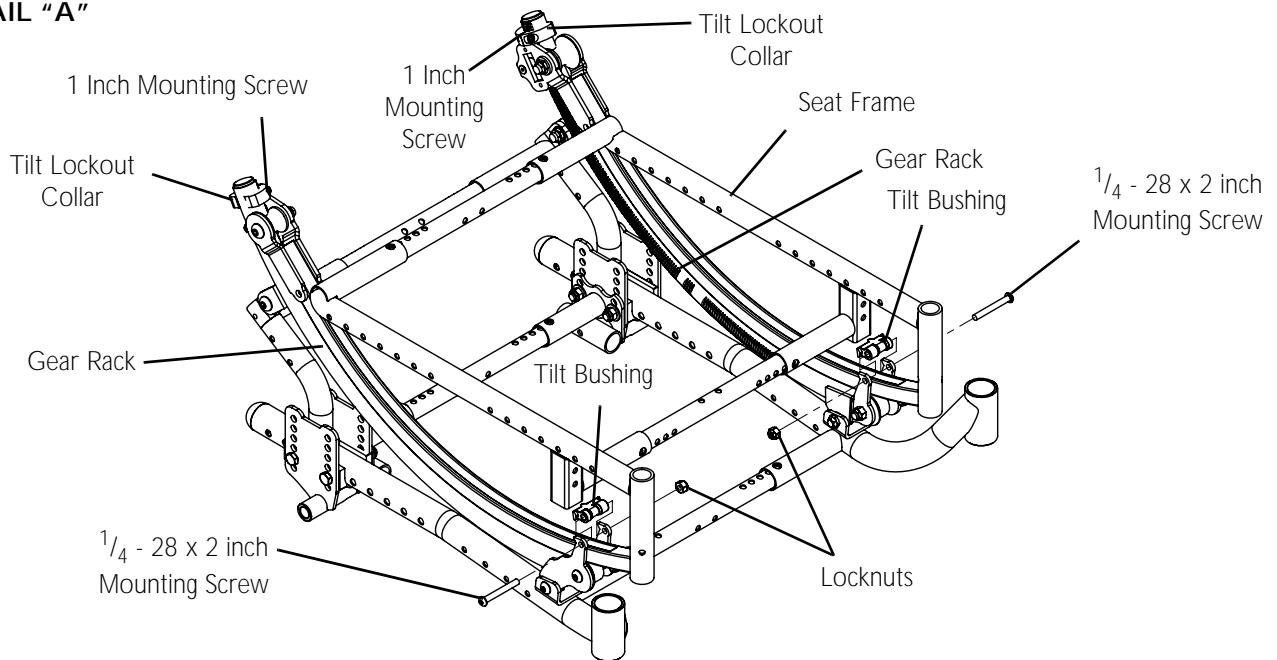
*NOTE: For this procedure, refer to FIGURE 7.12 on page 46.*

1. Secure the tilt bushing to the gear rack with one  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut (Detail "C"). Tighten securely.
2. Secure the front roller and bushing to the gear rack with one  $\frac{5}{16}$  - 18 x 2 inch mounting screw and locknut (Detail "C"). Tighten securely.
3. Secure the gear rack to the mounting bracket on the rear of the base frame with one 1 inch mounting screw, two washers, and locknut (Detail "B"). Tighten securely.
4. Secure the gear rack to the mounting bracket on the front of the base frame with one 2 inch mounting screw, two washers, spacer, and locknut (Detail "B"). Tighten securely.
5. Slide the seat frame down and onto the gear racks.
6. Secure the tilt lockout collars to the gear rack with 1 inch mounting screw (Detail "A"). Tighten securely.
7. Repeat STEP 7 for remaining tilt lockout collar.

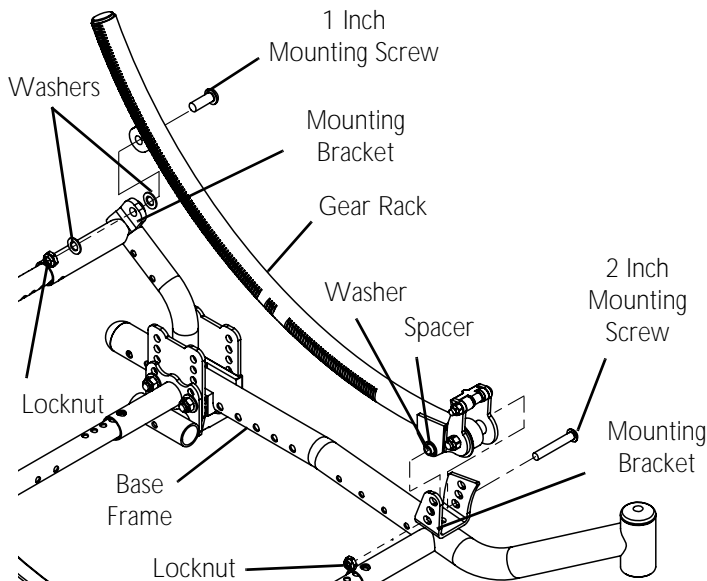
## SECTION 7—FRAME

8. Remove the  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut that secures the tilt bushing to the gear rack (Detail "A").
9. Repeat STEP 5 for remaining tilt bushing.
10. Remove the seat pan. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.
11. Remove the front riggings. Refer to the owner's manual, p/n 1154295.
12. Remove the seating system. Refer to the owner's manual, p/n 1154295.
13. Remove the trigger release lever. Refer to Removing/Installing the Trigger Release Lever with Cable on page 97.

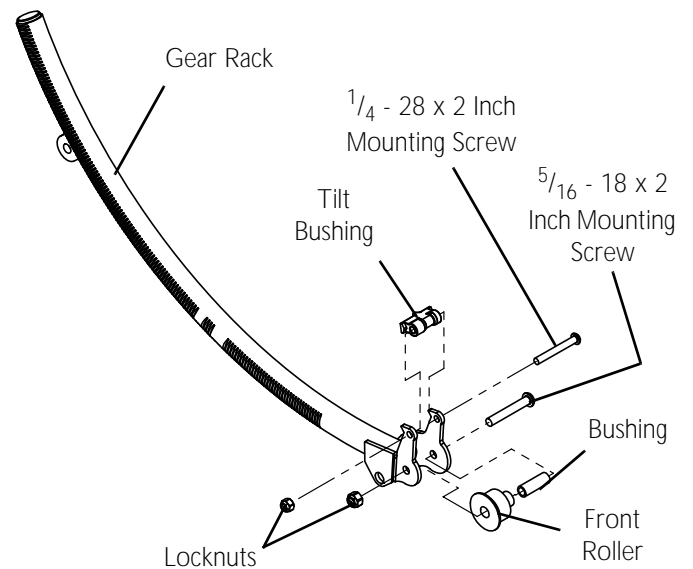
### DETAIL "A"



### DETAIL "B"



### DETAIL "C"



**FIGURE 7.12** Installing Gear Rack for 12-16 inch Deep Seat Frames

## Removing/Installing Rocker Tube (Foot Tilt)

*NOTE: For this procedure, refer to FIGURE 7.13.*

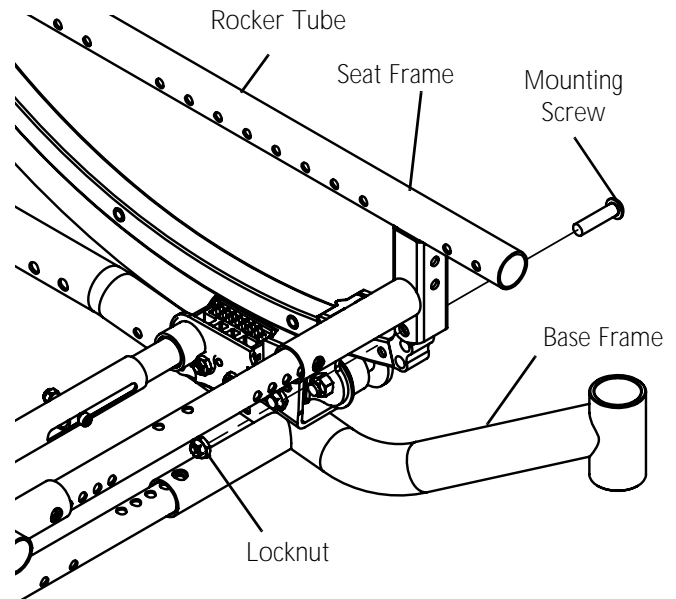
*NOTE: This procedure applies to 15-19 inch deep seat frames and 18-22 inch deep seat frames only. 12-16 inch deep seat frames are not equipped with rocker tubes.*

### Removing

1. Remove the gear rack. Refer to [Removing/Installing Gear Rack \(Foot Tilt\)](#) on page 40.
2. Remove the mounting screw and locknut that secures the rocker tube to the seat frame.
3. Remove the rocker tube from the wheelchair frame.

### Installing

1. Install the rocker tube onto the wheelchair frame.
2. Secure the rocker tube to the seat frame with one mounting screw and locknut. Tighten securely.
3. Install gear rack. Refer to [Removing/Installing Gear Rack \(Foot Tilt\)](#) on page 40.



**FIGURE 7.13** Removing/Installing Rocker Tube (Foot Tilt)

## Removing/Installing Rocker Tube (Hand Tilt)

*NOTE: For this procedure, refer to FIGURE 7.14 on page 48.*

*NOTE: This procedure applies to 15-19 inch deep seat frames and 18-22 inch deep seat frames only. 12-16 inch deep seat frames are not equipped with rocker tubes.*

### Removing

*NOTE: For this procedure, refer to FIGURE 7.9 on page 42.*

1. Remove the trigger release lever. Refer to [Removing/Installing the Trigger Release Lever with Cable](#) on page 97.
2. Remove the seating system. Refer to the owner's manual, p/n 1154295.
3. Remove the front riggings. Refer to the owner's manual, p/n 1154295.
4. Remove the seat pan. Refer to the owner's manual, p/n 1154295.
5. Remove two mounting screws and locknuts that secure the front of the seat frame to the rocker tubes (Detail "A").
6. Remove the two mounting screws and locknuts that secure the rear of the seat frame to the rocker tubes (Detail "A").
7. Remove the seat frame (Detail "A").
8. Remove the mounting screw that secures the tilt lockout collar to the gear rack (Detail "A").
9. Repeat STEP 8 for remaining tilt lock out collar.
10. Remove the rocker tube from the wheelchair frame (Detail "B").

### Installing

1. Install the rocker tube onto the wheelchair frame (Detail "B").
2. Secure the tilt lockout collar to the gear rack with one 1 inch mounting screw (Detail "A").
3. Repeat STEP 2 for remaining tilt lock out collar.
4. Install the seat frame (Detail "A").
5. Secure the rear of the seat frame to the rocker tubes with two 1 inch mounting screws and locknuts (Detail "A"). Tighten securely.

6. Secure the front of the seat frame to the rocker tubes with two 2 inch mounting screws and locknuts (Detail "A") Tighten securely.
7. Install the seat pan. Refer to [Install the Seat Pan](#) on page 58.
8. Install the front riggings. Refer to the owner's manual, p/n 1154295.
9. Install the seating system. Refer to the owner's manual, p/n 1154295.
10. Install the trigger release lever. Refer to [Removing/Installing the Trigger Release Lever with Cable](#) on page 97.

#### 15 - 19 INCH DEEP SEAT FRAMES OR 18-22 INCH DEEP SEAT FRAMES

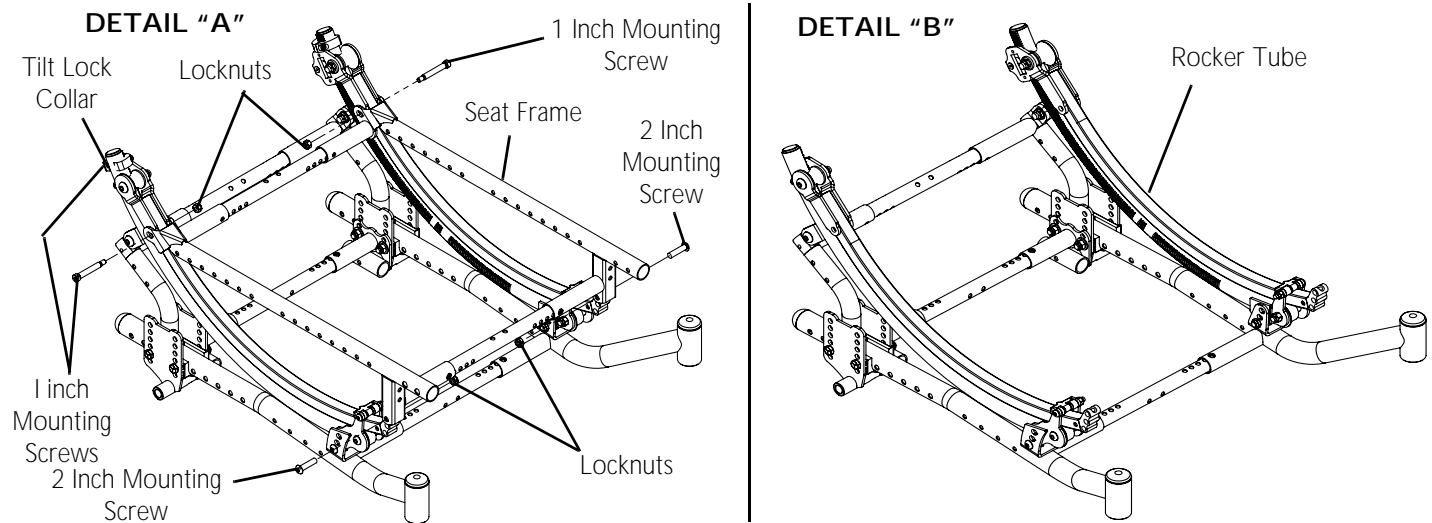


FIGURE 7.14 Removing/Installing Rocker Tube (Hand Tilt)

### Remove/Install Track Tube (Foot Tilt Only)

NOTE: Track tube exists with foot tilt option only.

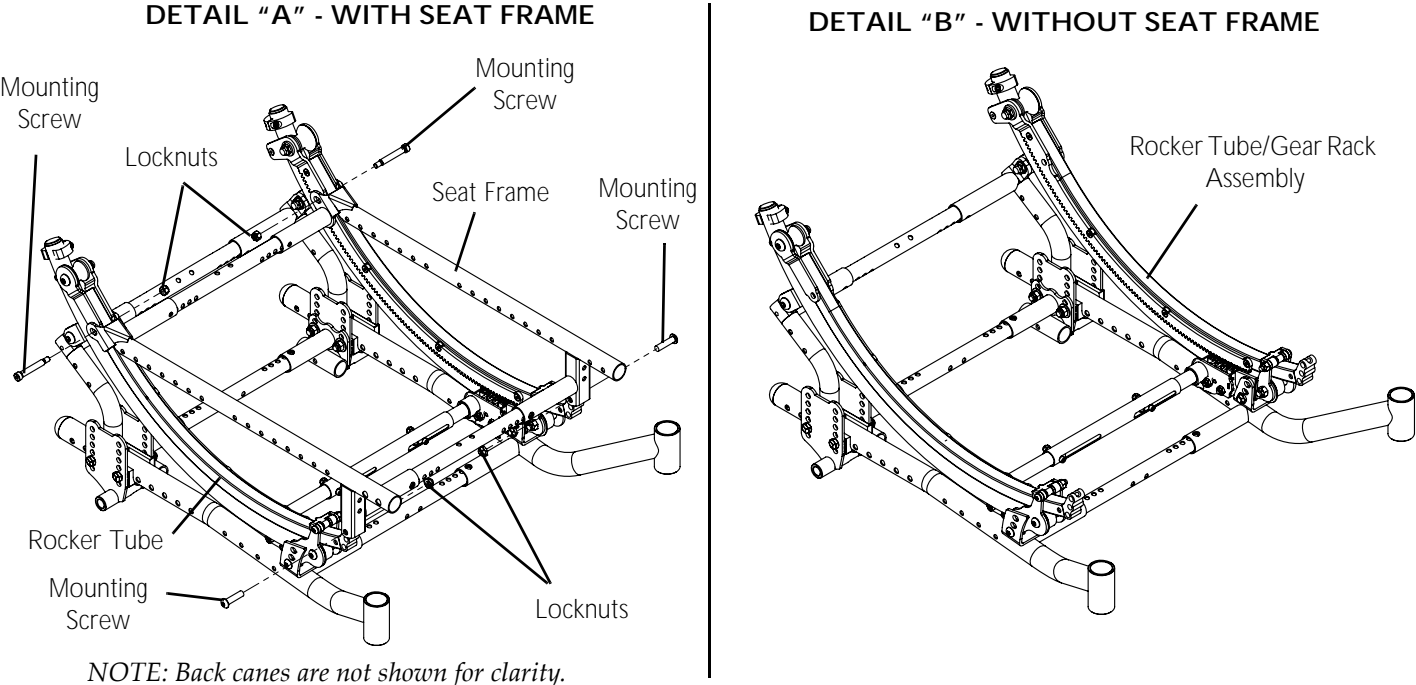
#### Remove Track Tube

NOTE: For this procedure, refer to FIGURE 7.15 on page 49 through FIGURE 7.18 on page 52.

1. Remove the seating system. Refer to the seating system owner's manual for removal.
2. Remove the front riggings. Refer to the owner's manual, p/n 1154295.
3. Remove the seat pan. Refer to [After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.](#) on page 55.
4. Perform one of the following:
  - A. For 15-19 inch deep seat frames and 18-22 inch seat frames:
    - i. Remove the two mounting screws and locknuts that secure the front of the seat frame to the rocker tubes/gear rack assembly (Detail "A").
    - ii. Remove the two mounting screws and locknuts that secure the rear of the seat frame to the rocker tubes/gear rack assembly (Detail "A").
    - iii. Remove the seat frame (Detail "A").
    - iv. Remove the rocker tube/gear rack assembly from the wheelchair frame (Detail "B").
  - B. For 12-16 inch deep seat frames:
    - i. Remove the  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut that secures the tilt bushing to the track tube.
    - ii. Repeat STEP i for remaining tilt bushing.
    - iii. Remove the 1.00 inch mounting screw that secure the tilt lockout collars to each track tube.
    - iv. Slide the seat frame up and off of the track tubes.



15 - 19 INCH DEEP SEAT FRAMES OR 18-22 INCH DEEP SEAT FRAMES



12 - 16 Inch Deep Seat Frames

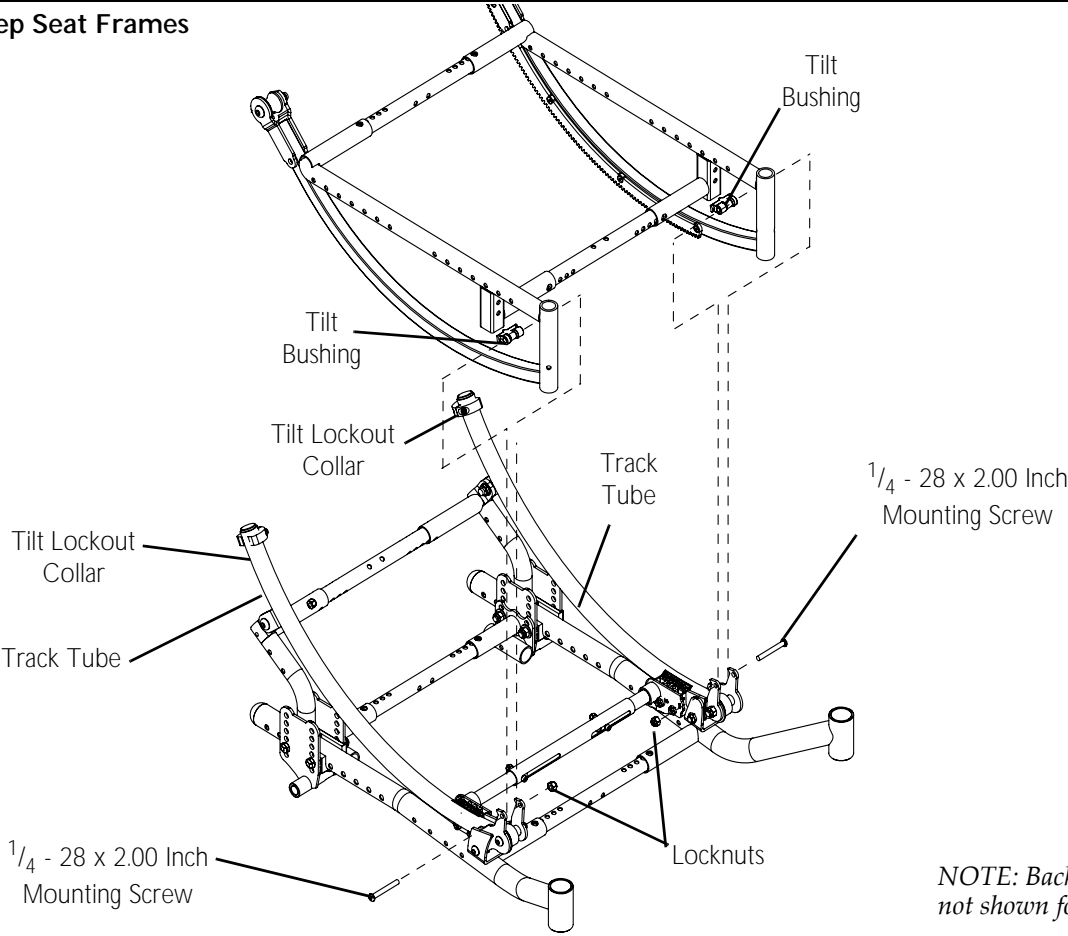
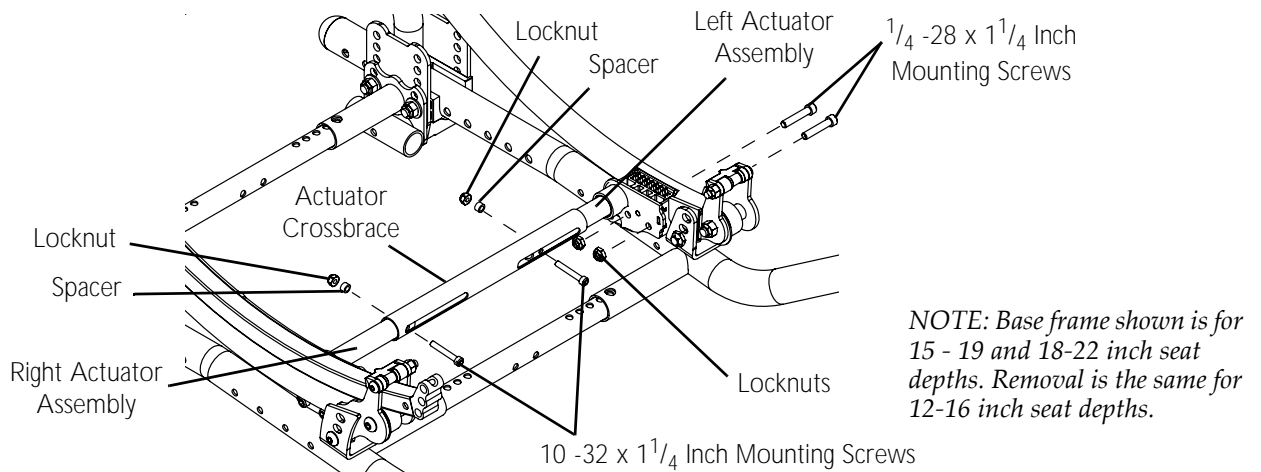


FIGURE 7.15 Remove Track Tube

5. Remove the two  $\frac{1}{4}$ -28 x  $1\frac{1}{4}$  Inch mounting screws, spacers, and locknuts that secure the actuator crossbrace to the left/right actuator assemblies (FIGURE 7.16).
6. Slide the actuator crossbrace toward the opposite side of the track tube being removed (FIGURE 7.16).
7. Remove the two 10 -32 x  $1\frac{1}{4}$  inch mounting screws that secure the actuator assembly to the track tube (FIGURE 7.16).

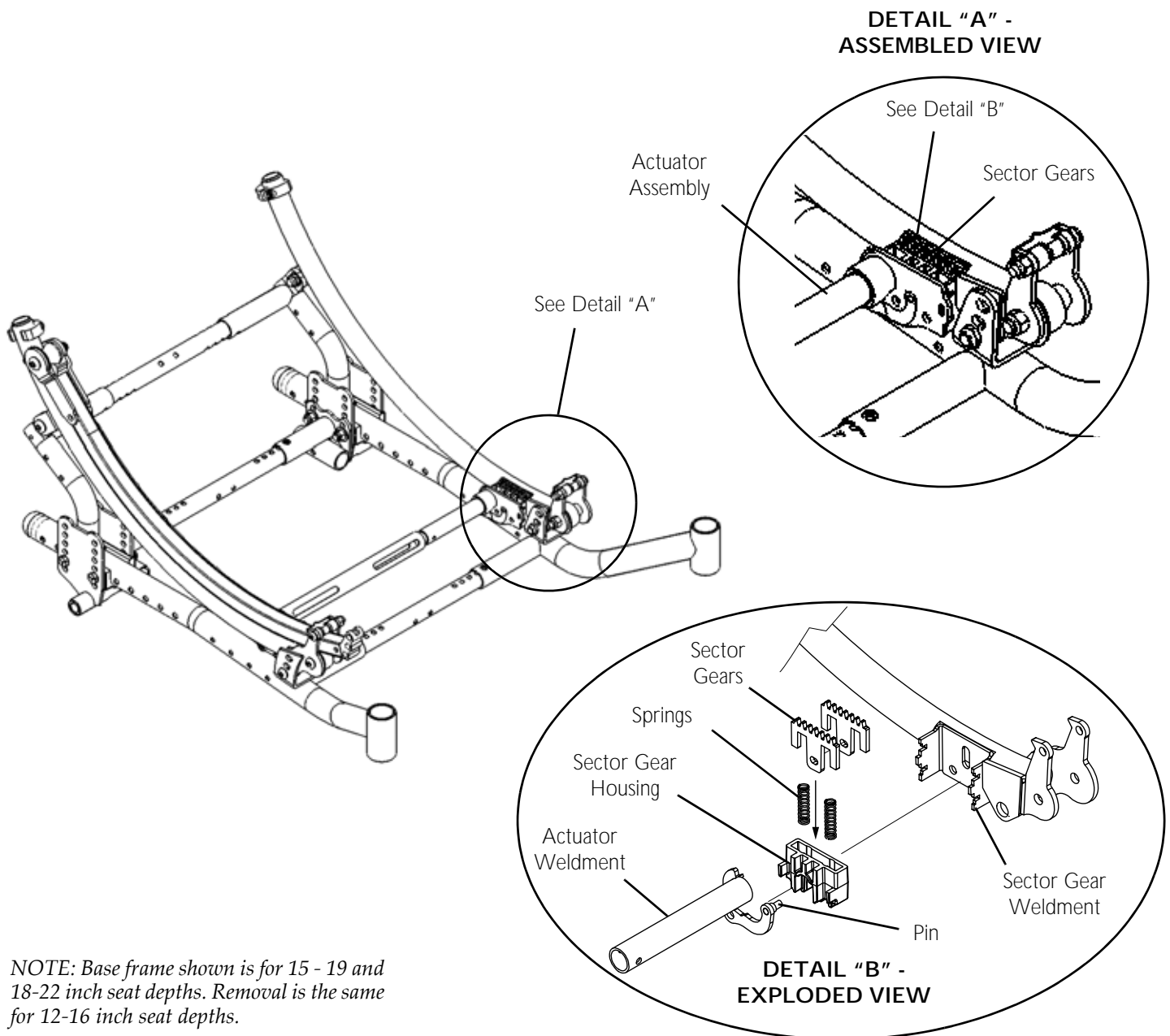


**FIGURE 7.16** Actuator Crossbrace/Actuator Assembly

### ⚠ WARNING

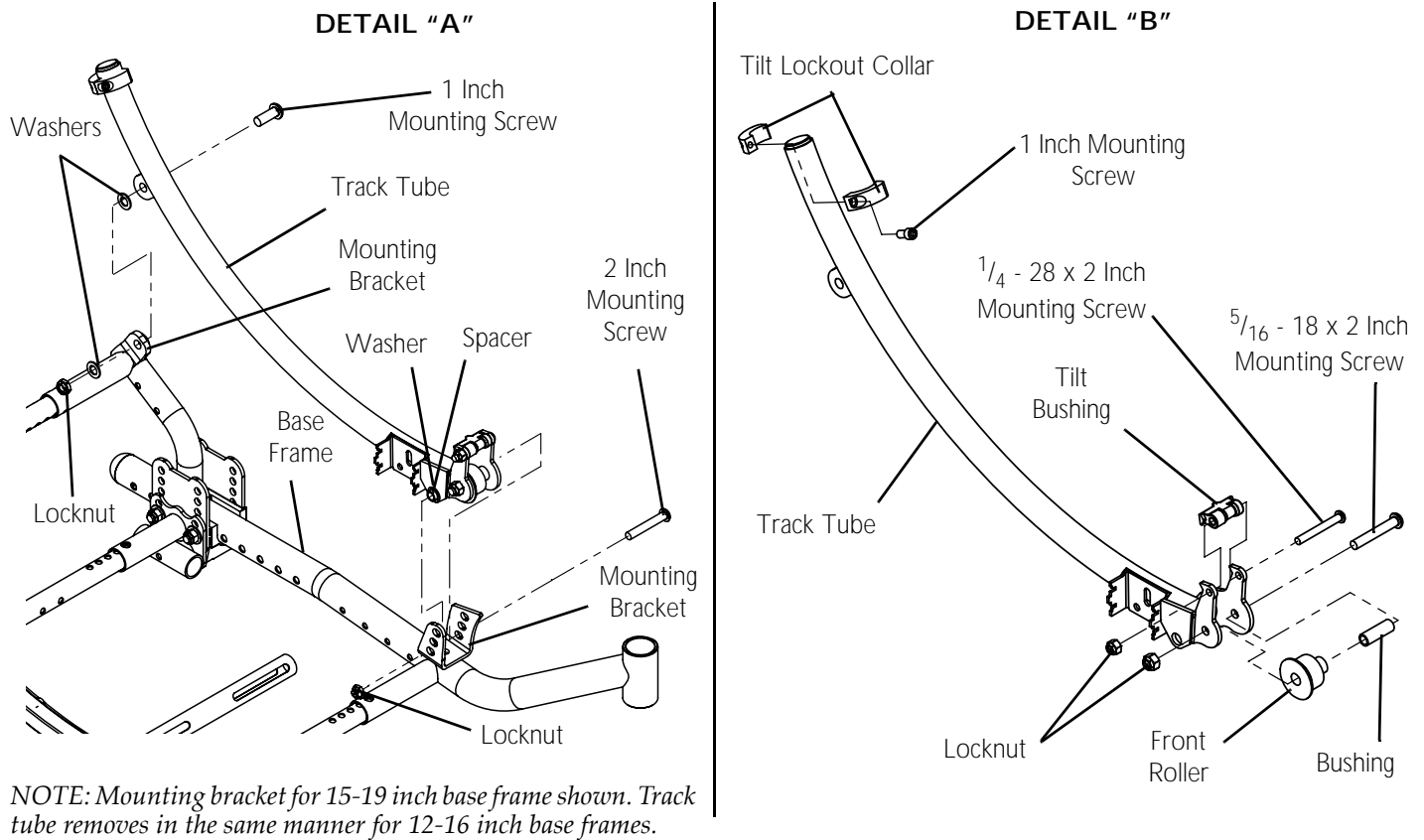
The sector gears are held in place, under a small amount of compression, inside the sector gear housing by the pin on the actuator assembly. When removing the actuator assembly from the sector gear housing hold the sector gears in place to prevent them from becoming projectiles and potentially causing injury.

8. Place one hand over the sector gears (FIGURE 7.18 on page 52).
9. Remove the actuator assembly from the sector gear housing (FIGURE 7.18 on page 52).
10. Remove the sector gear housing and sector gears from sector gear weldment on track tube (FIGURE 7.18 on page 52).



**FIGURE 7.17** Removing the Actuator Assembly from the Track Tube

11. Remove the 2 inch mounting screw, two washers, spacer, and locknut that secures the track tube assembly to the mounting bracket on the front of the base frame (Detail "A" in FIGURE 7.18).
12. Remove the 1 inch mounting screw, two washers, and locknut that secure the track tube the to mounting bracket on the rear of the base frame (Detail "A" in FIGURE 7.18).
13. Disassemble track tube (Detail "B" in FIGURE 7.18):
  - A. Remove the mounting screw and locknut that secures the front roller and bushing to the track tube.
  - B. Remove the mounting screw and locknut that secures the tilt bushing to the track tube.
  - C. Remove the mounting screw that secures the tilt lockout collar to the track tube.



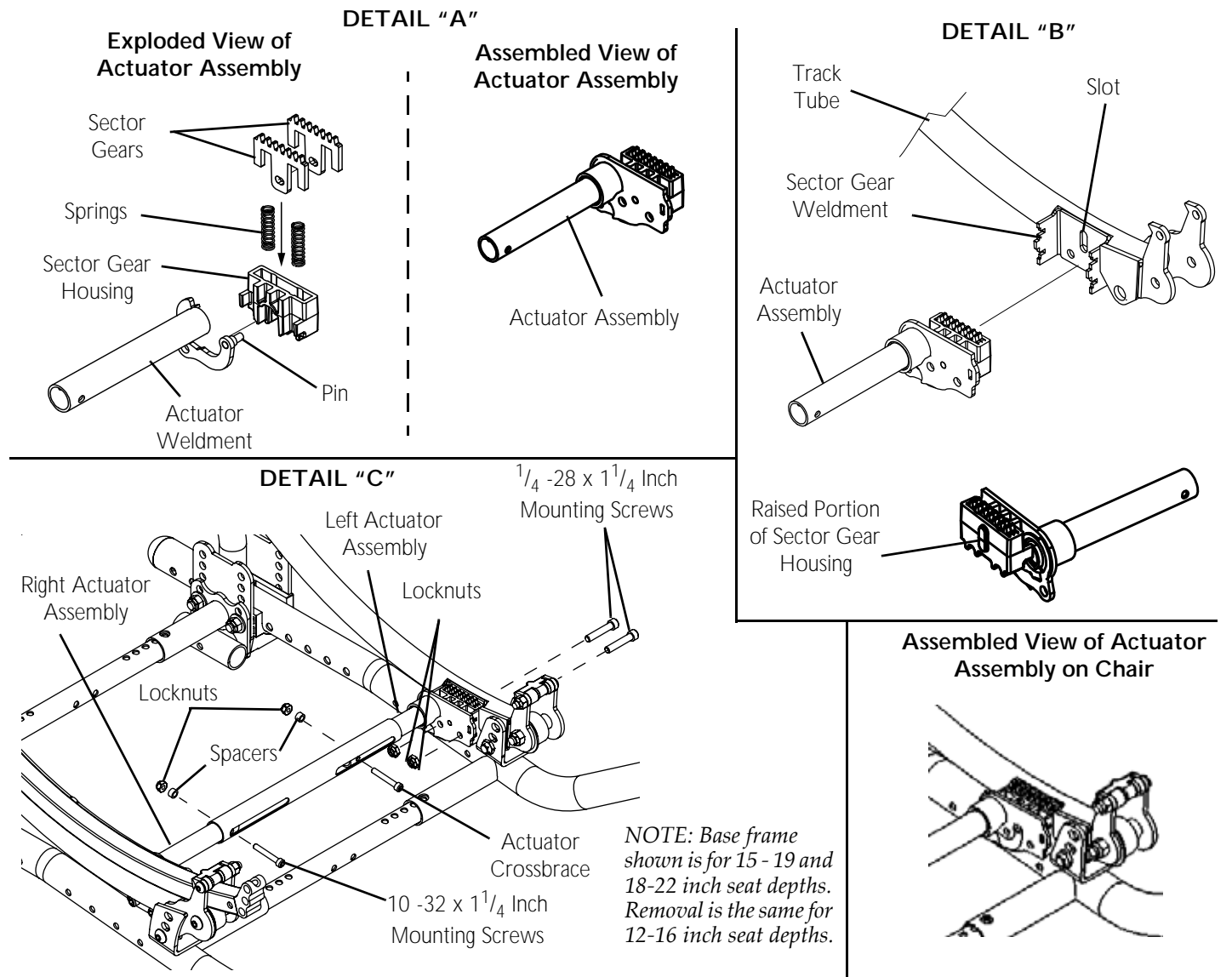
**FIGURE 7.18** Remove the Track Tube

## Install Track Tube

*NOTE: For this procedure, refer to FIGURE 7.18 on page 52 through FIGURE 7.20 on page 54.*

1. Assemble the track tube (Detail "B" in FIGURE 7.18):
  - A. Secure the tilt lockout collar to the track tube with the 1 inch mounting screw. Tighten securely.
  - B. Secure the tilt bushing to the track tube with  $\frac{1}{4}$  - 28 x 2 inch mounting screw and locknut. Tighten securely.
  - C. Secure the front roller and bushing to the track tube with  $\frac{5}{16}$  - 18 x 2 inch mounting screw and locknut. Tighten securely.
2. Secure the track tube to the mounting bracket on the rear of the base frame with the 1 inch mounting screw, two washers, and locknut. Tighten securely (Detail "A" in FIGURE 7.18).
3. Secure the track tube assembly to the mounting bracket on the front of the base frame with 2 inch mounting screw, two washers, spacer, and locknut. Tighten securely (Detail "A" in FIGURE 7.18).
4. With sector gears positioned together, place on top of springs inside sector gear housing (Detail "A" of FIGURE 7.19).
5. Push down on the sector gears and insert pin of actuator weldment into hole in sector gears to secure sector gears in place (Detail "A" of FIGURE 7.19).
6. Position actuator assembly in sector gear weldment of track tube with raised portion of sector gear housing inserted into slot of sector gear weldment (Detail "B" of FIGURE 7.19).
7. Secure the actuator assembly to the track tube with two  $\frac{1}{4}$  - 28 x  $1\frac{1}{4}$  inch mounting screws. Tighten securely (Detail "C" of FIGURE 7.19).
8. Slide the actuator crossbrace toward the middle encompassing both the left and right actuator assemblies (Detail "C" of FIGURE 7.19).

9. Secure the actuator crossbrace to the left and right actuator assemblies with two 10 - 32 x 1<sup>1</sup>/<sub>4</sub> inch mounting screws, spacers, and locknuts. Tighten securely (Detail "C" of FIGURE 7.19).

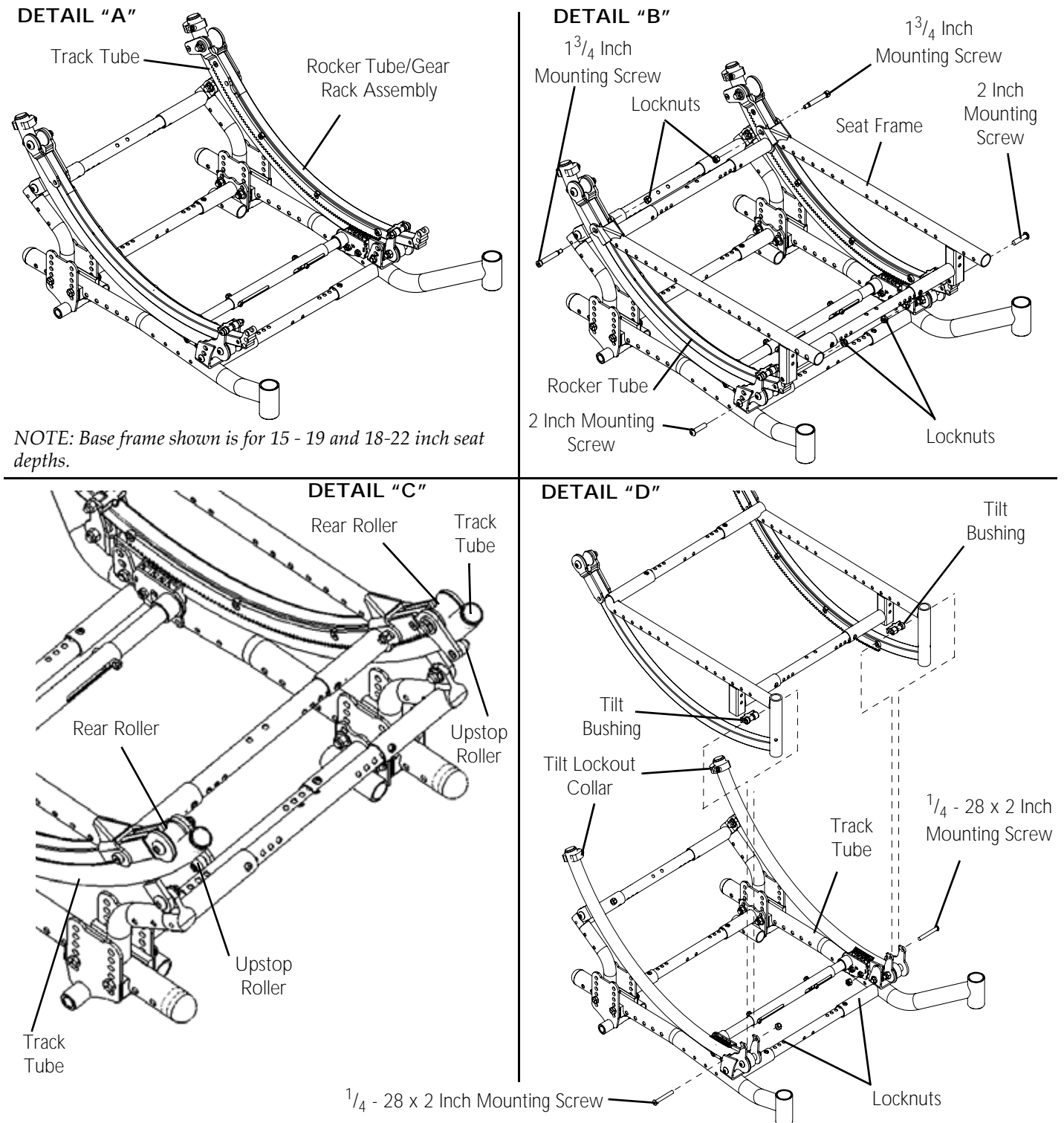


**FIGURE 7.19** Install Track Tube

10. Perform one of the following:

- A. For 15-19 inch deep seat frames and 18-22 inch deep seat frames (FIGURE 7.20 on page 54):
- Position the rocker tube/gear rack assembly onto the track tube (Detail "A").
  - Install the seat frame onto the rocker tube/gear rack assembly (Detail "B").
  - Secure the rear of the seat frame to the rocker tubes with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts (Detail "B"). Tighten securely.
  - Secure the front of the seat frame to the rocker tubes with two 2 inch mounting screws and locknuts (Detail "B"). Tighten securely.
- B. For 12-16 inch deep seat frames (FIGURE 7.20 on page 54):
- Position rear rollers of the seat frame above the track tube and the upstop roller on the below the track tube (Detail "C").
  - Slide the seat frame down the track tubes and position the lower curve portion of the seat frame in between the front roller plates (Detail "C").
  - Secure the tilt lock out collars to each track tube with 1.00 inch mounting screws (Detail "D"). Tighten securely.

- iv. Secure the tilt bushing to the track tube with  $\frac{1}{4}$  - 28 x 2 inch mounting screws and locknuts (Detail "D"). Tighten securely.
  - v. Repeat STEP iv for remaining tilt bushing.
11. Install the seat pan. Refer to Install the Seat Pan on page 58.
  12. Install the front riggings. Refer to the owner's manual, p/n 1154295.
  13. Install the seating system. Refer to the seating system owner's manual for removal.



**FIGURE 7.20** Install Track Tube

## SECTION 8—SEAT (WHEELCHAIRS BUILT BEFORE 4/5/2010)

### ⚠ WARNING

After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

NOTE: For wheelchairs built after 4/5/2010, refer to Section 9. Remove the Seat Pan

### Wider Seat Pans

NOTE: For this procedure, refer to FIGURE 8.1.

NOTE: Wider seat pans will require the seat pan to be secured to each end of the crossbrace assembly. The mounting screws that secure the crossbrace tube to the rear seat pan mounting brackets will also secure the seat pan in place. In these instances, utilization of the slots provided on the sides of the seat pan will be necessary.

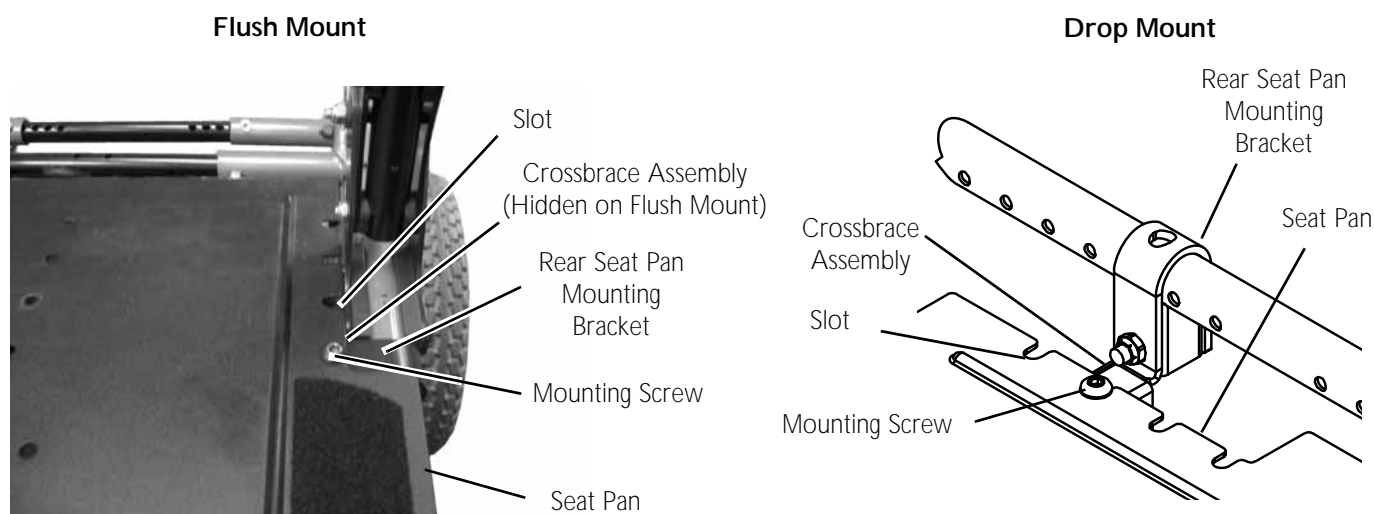


FIGURE 8.1 Wider Seat Pans

### Flush Mount

NOTE: For this procedure, refer to FIGURE 8.2 on page 56.

NOTE: This procedure applies to 12-16, 15-19, and 18-22 inch deep seat frames.

1. Review [Wider Seat Pans](#) on page 55.
2. Evaluate the seat pan and determine if it's a narrow seat pan or a wide seat pan.
3. Remove the 1 <sup>3</sup>/<sub>4</sub> inch mounting screw (Black) and locknut (Black) that secure the seat pan to the crossbrace tube.
4. Remove the 1 <sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts that secure the seat pan to the front seat pan mounting brackets.
5. For wider seat pans, remove the mounting screw and locknut on each end of the crossbrace tube.
6. Remove the seat pan.
7. For wider seat pans, also remove the crossbrace tube and rear seat pan mounting brackets.

NOTE: Large seat frame shown.

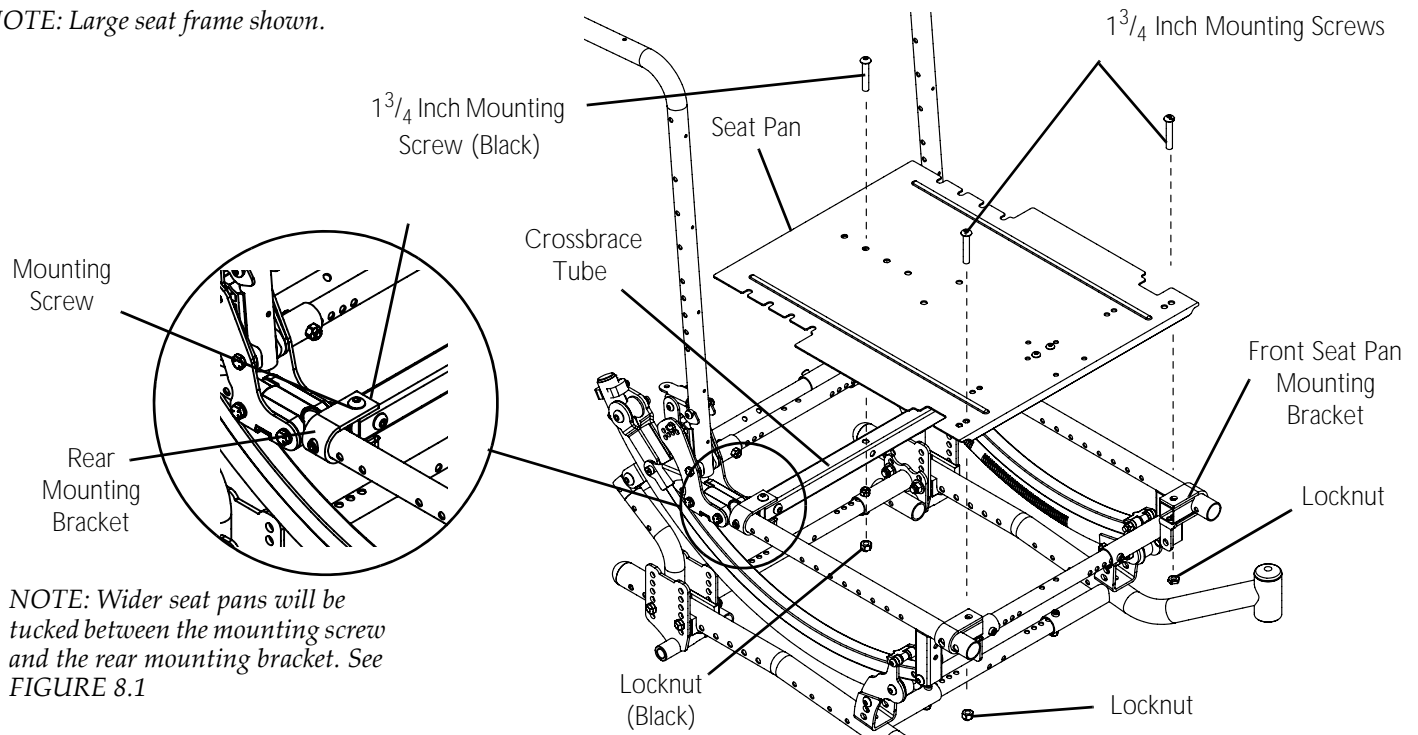


FIGURE 8.2 Flush Mount

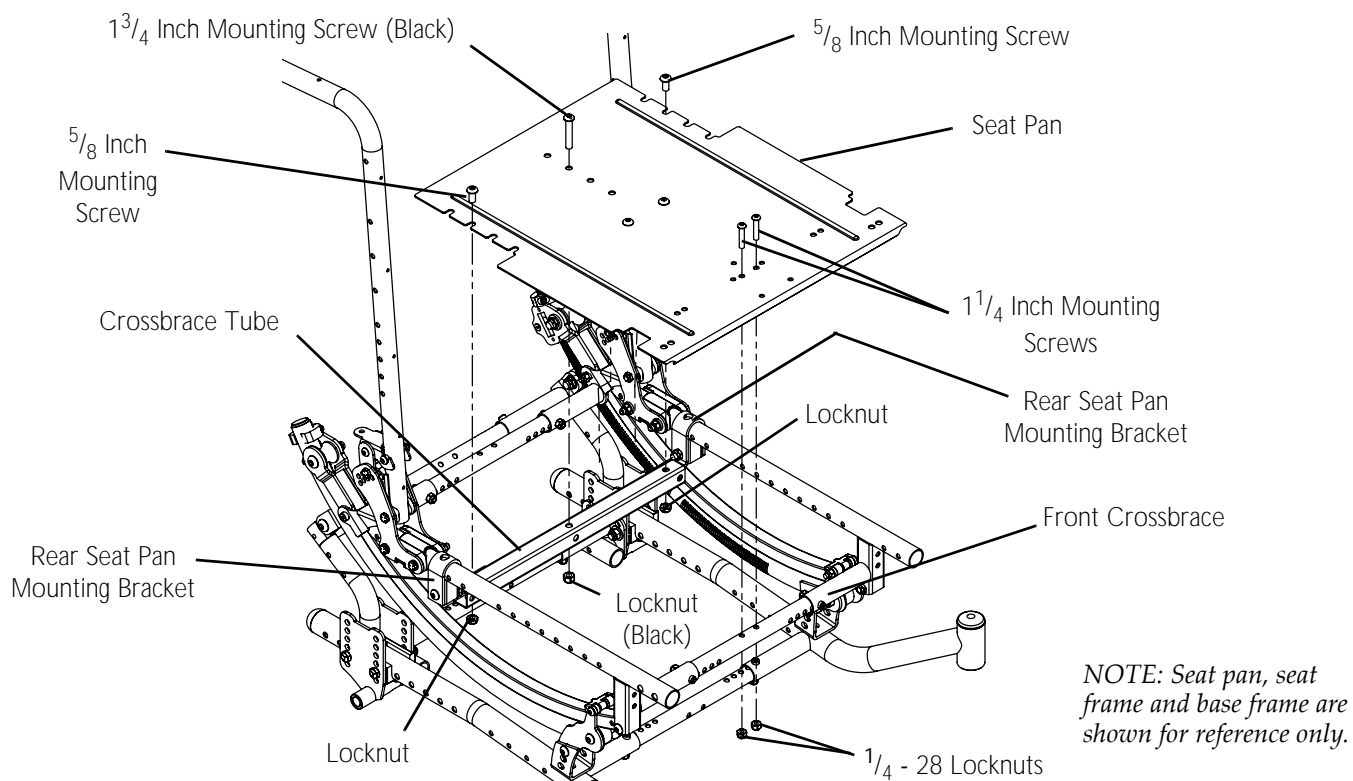
## Drop Mount

### 12-16 Inch Deep and 15-19 Inch Deep Seat Frames

NOTE: For this procedure, refer to FIGURE 8.3 on page 57.

1. Remove the cushion from the seat pan.
2. Remove the  $1\frac{3}{4}$  inch mounting screw (Black) and locknut (Black) that secures the seat pan to the crossbrace tube.
3. Remove the two  $1\frac{1}{4}$  inch mounting screws and  $\frac{1}{4}$  - 28 locknuts that secure the seat pan to the front crossbrace.
4. For wider seat pans, remove the two  $\frac{5}{8}$  inch mounting screws and locknuts that secure the seat pan and crossbrace tube to the rear seat pan mounting brackets.
5. Remove the seat pan.





**FIGURE 8.3** Drop Mount - 12-16 Inch Deep and 15-19 Inch Deep Seat Frames

### 18 - 22 Inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 8.4 on page 58.*

1. Remove the cushion from the seat pan.
2. Remove the  $1\frac{3}{4}$  inch mounting screw (Black) and locknut (Black) that secures the seat pan to the crossbrace tube.
3. Remove the two  $1\frac{1}{4}$  inch mounting screws and  $1/4$ -28 locknuts that secure the seat pan to the front crossbrace.
4. Remove the  $5/8$  inch mounting screws and locknuts that secure the seat pan to the front seat pan mounting brackets.
5. For wider seat pans, remove the  $5/8$  inch mounting screws and locknuts that secure the seat pan to the crossbrace tube.
6. Remove the seat pan.

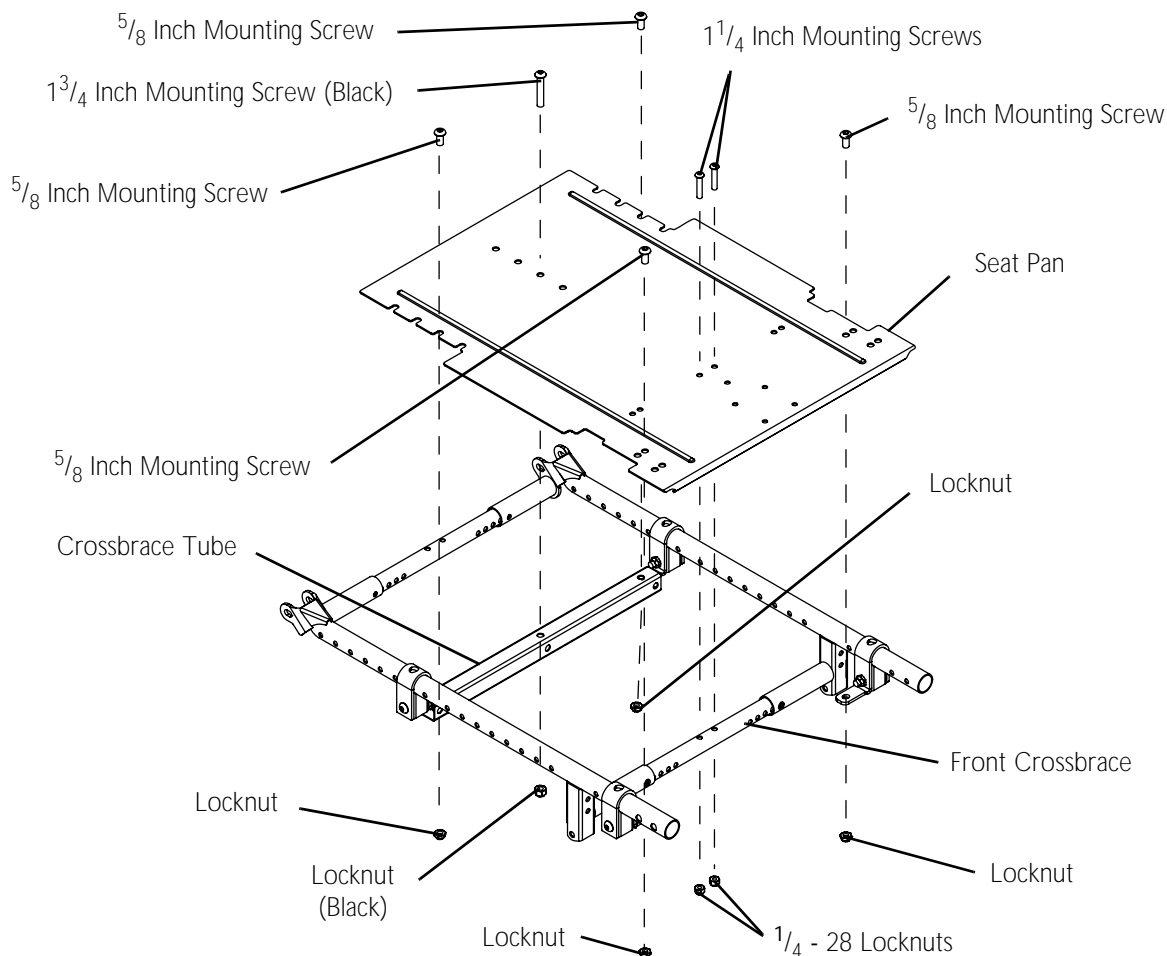


FIGURE 8.4 Drop Mount - 18 - 22 Inch Deep Seat Frames

## Install the Seat Pan

### Flush Mount

NOTE: This procedure applies to 12-16, 15-19, and 18-22 inch deep seat frames

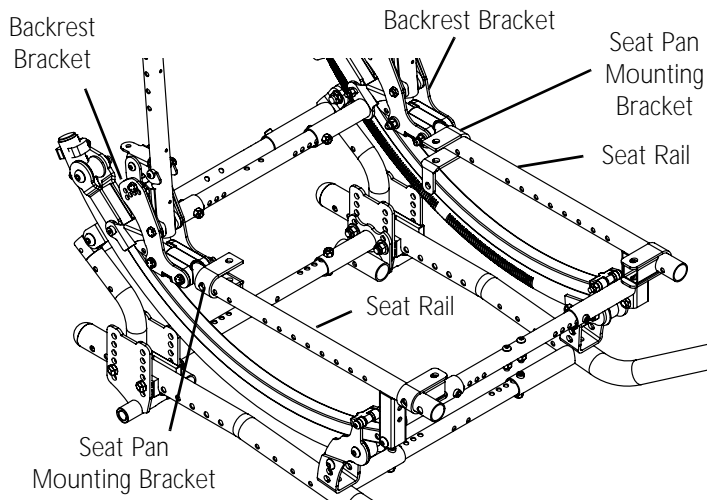
1. Perform one of the following:
  - For narrow seat pans, proceed to [Seat Pan](#) on page 59.
  - For wider seat pans, proceed to [Install Crossbrace Tube](#) on page 58.

### Install Crossbrace Tube

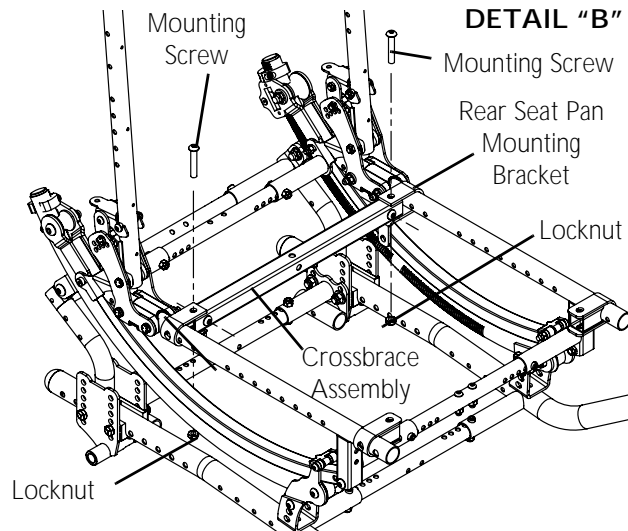
NOTE: For this procedure, refer to FIGURE 8.5 on page 59.

1. Perform one of the following
  - A. For small seat frames and medium seat frames:
    - i. Position one seat pan mounting bracket on each seat rail in front of backrest bracket (Detail "A" in FIGURE 8.5).
    - ii. Loosely secure crossbrace tube to rear seat pan mounting brackets with two mounting screws and locknuts (Detail "B" in FIGURE 8.5).
  - B. For large seat frames:
    - i. Position one seat pan mounting bracket on each seat rail over head of mounting screw in seat rail. (Detail "D" in FIGURE 8.5)
    - ii. Secure crossbrace tube to rear seat pan mounting brackets with two mounting screws and locknuts (Detail "B" in FIGURE 8.5).

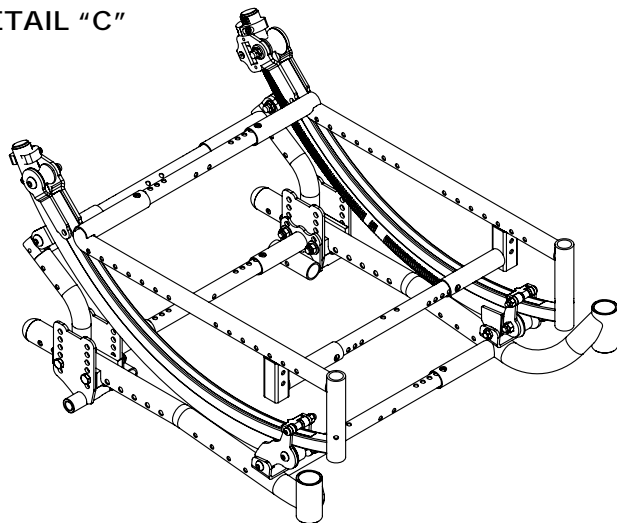
2. Proceed to Seat Pan on page 59.

**DETAIL "A"**

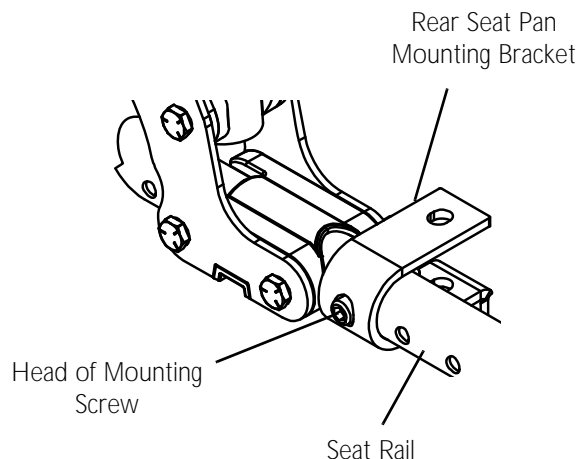
NOTE: 15 -19 inch seat frame shown. See Detail "C" for 12 - 16 inch deep seat frame.

**DETAIL "B"**

NOTE: 15 -19 inch seat frame shown. See Detail "C" for 12 - 16 inch deep seat frame

**DETAIL "C"**

NOTE: 12 - 16 inch deep seat frame shown for reference only. Hardware used is identical for medium seat frame.

**DETAIL "D" - FOR 18 - 22 INCH DEEP SEAT FRAME**

**FIGURE 8.5** Install the Seat Pan - Flush Mount - Install Crossbrace Tube

**Seat Pan**

1. Position seat pan on seat pan mounting brackets and crossbrace tube.

NOTE: When securing the seat pan to the seat pan mounting brackets, ensure that the seat pan mounting bracket is positioned over the head of the mounting screw that secures the telescoping tube in place. This will ensure that the seat pan stays in position and does not shift during operation of the wheelchair.

2. Secure the seat pan to the seat pan mounting brackets (with one spacer block inside of each seat pan mounting bracket) with two mounting screws and locknuts. Tighten securely.

NOTE: After securing seat pan to front seat pan mounting brackets, check to ensure that the seat pan mounting bracket has remained positioned over the head of the mounting screw.

3. Perform one of the following:

A. For narrow seat pans:

- i. Secure the seat pan to the crossbrace tube with one 1<sup>3</sup>/<sub>4</sub> inch mounting screw (Black) and locknut (Black). Tighten securely.

B. For wider seat pans:

- i. Slide the crossbrace tube forward or back until one of the rear center mounting holes in the seat pan align with the center mounting hole in the crossbrace tube.
- ii. Secure the seat pan to the crossbrace tube with one 1<sup>3</sup>/<sub>4</sub> inch mounting screw (Black) and locknut (Black). Tighten securely.
- iii. Tuck the seat pan between the mounting screw and the rear seat pan mounting bracket utilizing the slots available.
- iv. Secure the seat pan to the crossbrace tube with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts. Tighten securely.

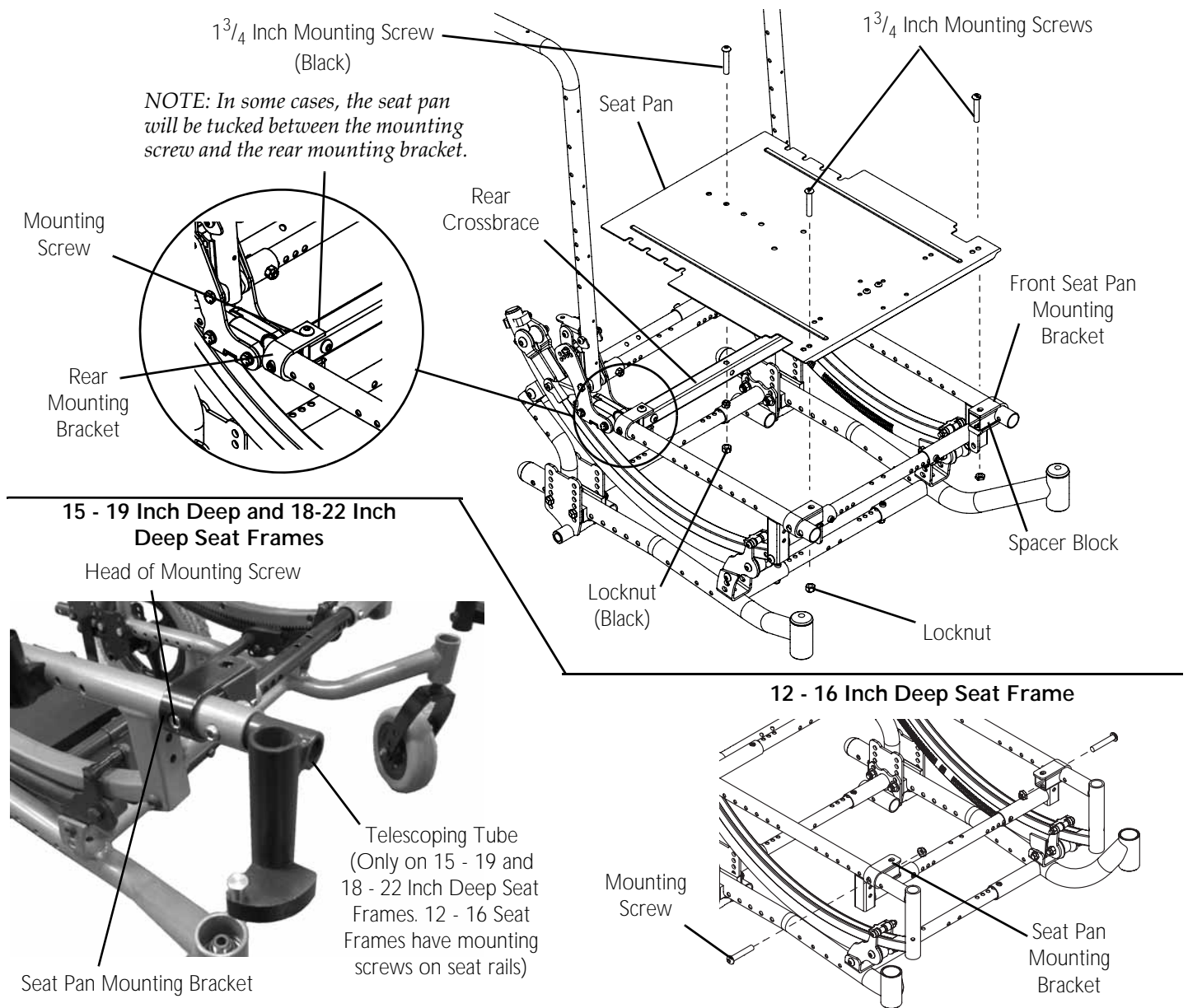


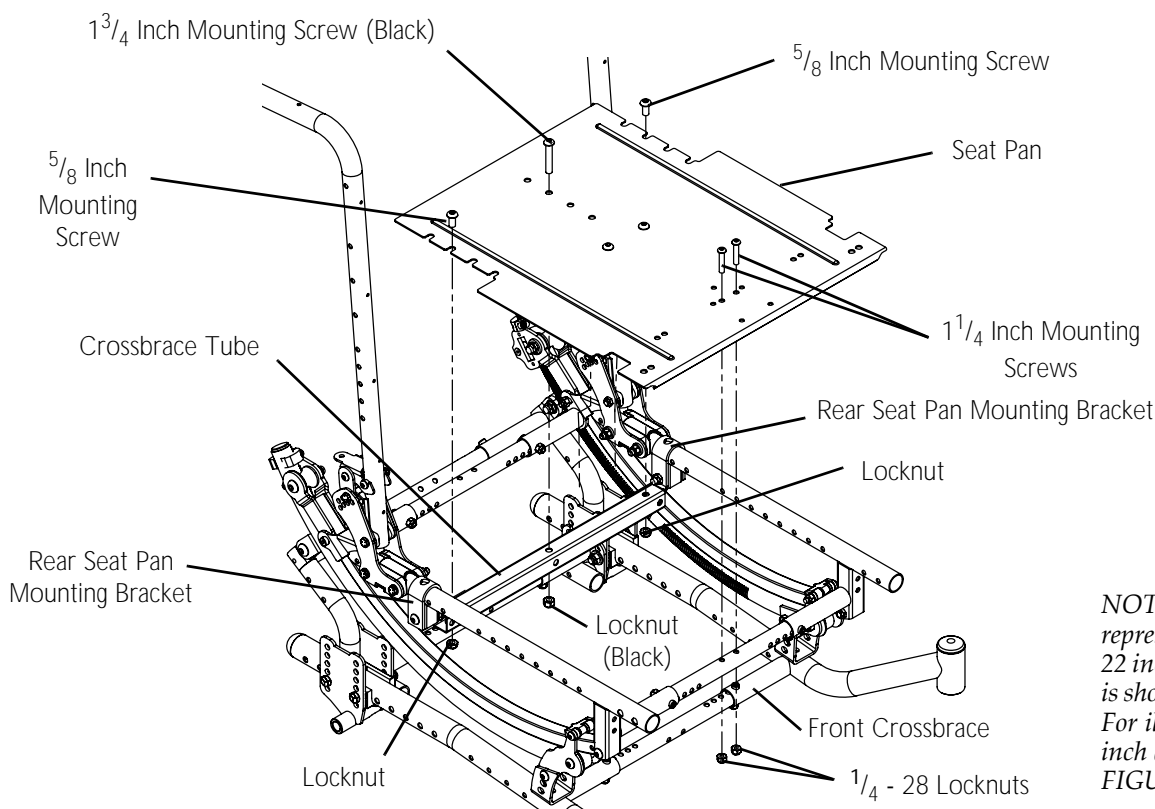
FIGURE 8.6 Install the Seat Pan - Flush Mount - Seat Pan

## Drop Mount

### 12 - 16 Inch and 15 - 19 Inch Deep Seat Frames

NOTE: For this procedure, refer to FIGURE 8.7.

1. Position seat pan on crossbrace tube and front crossbrace.
2. For wider seat pans, secure the seat pan and crossbrace tube to the rear seat pan mounting brackets with two  $\frac{5}{8}$  inch mounting screws and locknuts. Tighten securely.
3. Secure the seat pan to the front crossbrace with two  $1\frac{1}{4}$  inch mounting screws and  $\frac{1}{4}$  - 28 locknuts. Tighten securely.
4. Secure the seat pan to the crossbrace tube with  $1\frac{3}{4}$  inch mounting screw (Black) and locknut (Black). Tighten securely.



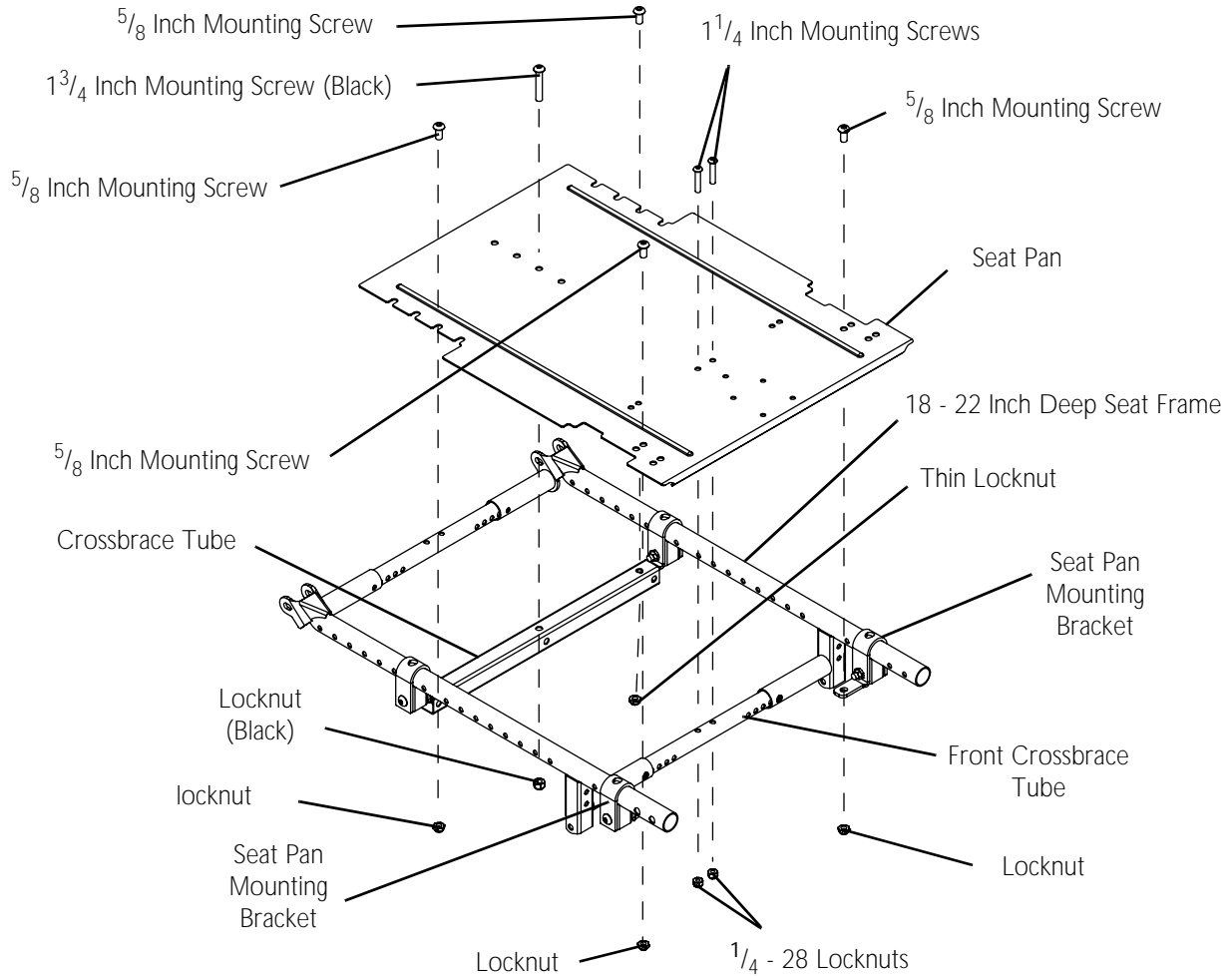
NOTE: Seat frame represents 15 -19 and 18 - 22 inch deep seat frame and is shown for reference only. For illustration of 12 - 16 inch deep seat frame, see FIGURE 8.5.

FIGURE 8.7 Install the Seat Pan - Drop Mount - 12 - 16 Inch and 15 - 19 Inch Deep Seat Frames

### 18 - 22 Inch Deep Seat Frames

NOTE: For this procedure, refer to FIGURE 8.8 on page 62.

1. Position the seat pan on the crossbrace tube, front crossbrace and seat pan mounting brackets.
2. For wider seat pans, secure the rear of the seat pan to the crossbrace tube with two  $\frac{5}{8}$  inch mounting screws and locknuts. Tighten securely.
3. Secure the seat pan to the seat pan mounting brackets with two  $\frac{5}{8}$  inch mounting screws and locknuts. Tighten securely.
4. Secure the seat pan to the front crossbrace with two  $1\frac{1}{4}$  inch mounting screws and  $\frac{1}{4}$ -28 locknuts. Tighten securely.
5. Secure the seat pan to the crossbrace tube with  $1\frac{3}{4}$  inch mounting screw (Black) and locknut (Black).
6. Tighten securely.



**FIGURE 8.8** Install the Seat Pan - Drop Mount - 18 - 22 Inch Deep Seat Frames

## Adjusting the Seat Depth

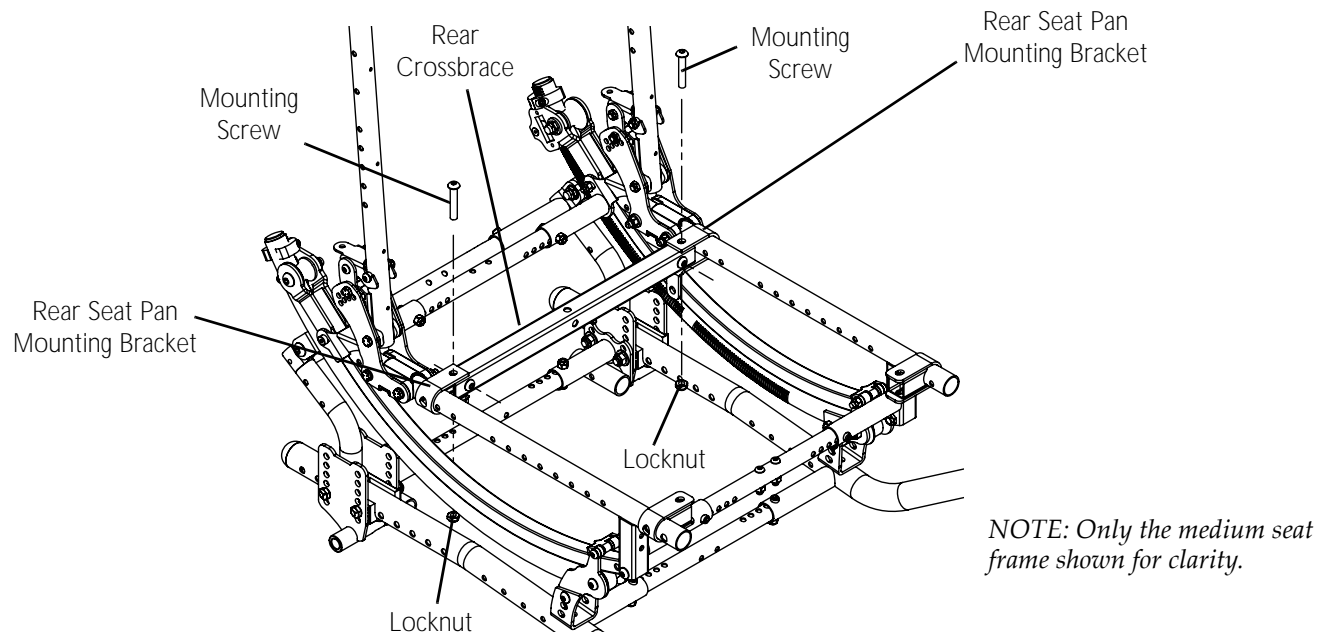
### Removing Backrest Brackets/Back Cane Assembly

*NOTE: For this procedure, refer to FIGURE 8.9 on page 63., FIGURE 8.10 on page 64, FIGURE 8.11 on page 65, and FIGURE 8.12 on page 67.*

1. Remove the arms. Refer to Arms on page 31 of the owner's manual, p/n 1154295.
2. Remove the back upholstery or seating system.
3. Remove the seat pan. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.

*NOTE: Narrower seat pans will not have the mounting screws removed that secure the crossbrace tube and rear seat pan mounting brackets together. The crossbrace tube and mounting brackets need to be removed in order to adjust the seat depth. If the crossbrace tube and rear seat pan mounting brackets are not removed after removing the seat pan, perform STEP 4.*

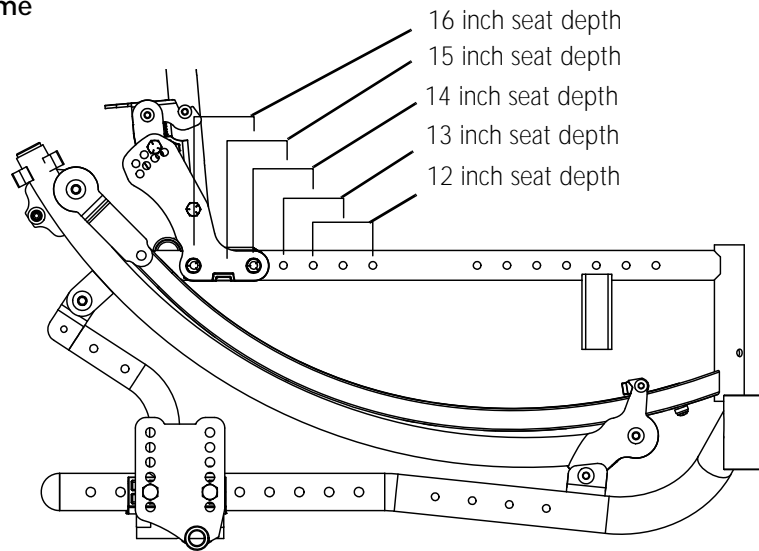
4. Remove the two mounting screws and locknuts that secure the crossbrace tube to the rear seat pan mounting brackets.
5. Remove the crossbrace tube and rear seat pan mounting brackets.



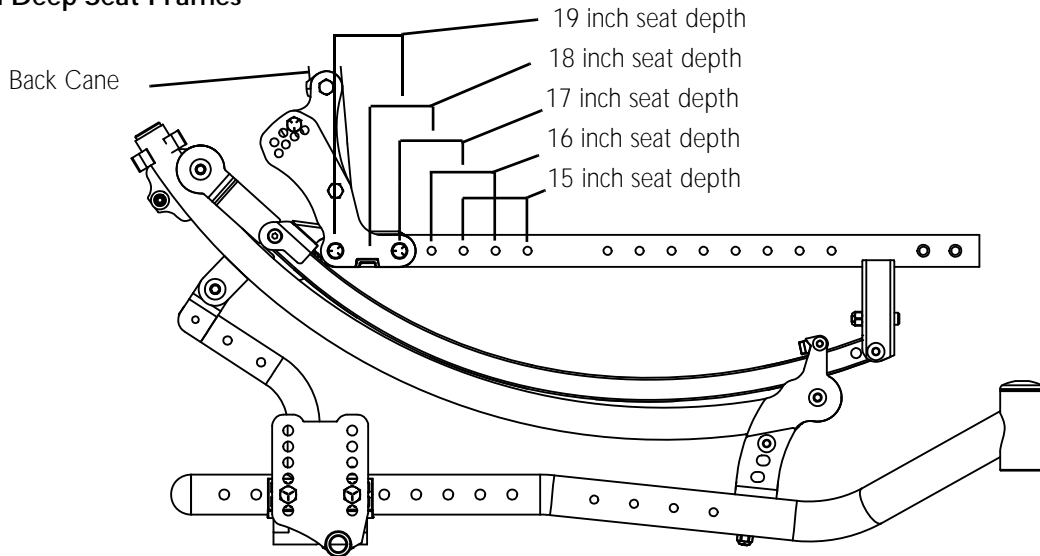
**FIGURE 8.9** Adjusting the Seat Depth - Removing Backrest Brackets/Back Cane Assembly

6. Review FIGURE 8.10 on page 64 to determine which seat rail mounting holes are needed for the desired seat depth.

12 - 16 Inch Deep Seat Frame



15 - 19 Inch Deep Seat Frames



18 - 22 Inch Deep Seat Frame

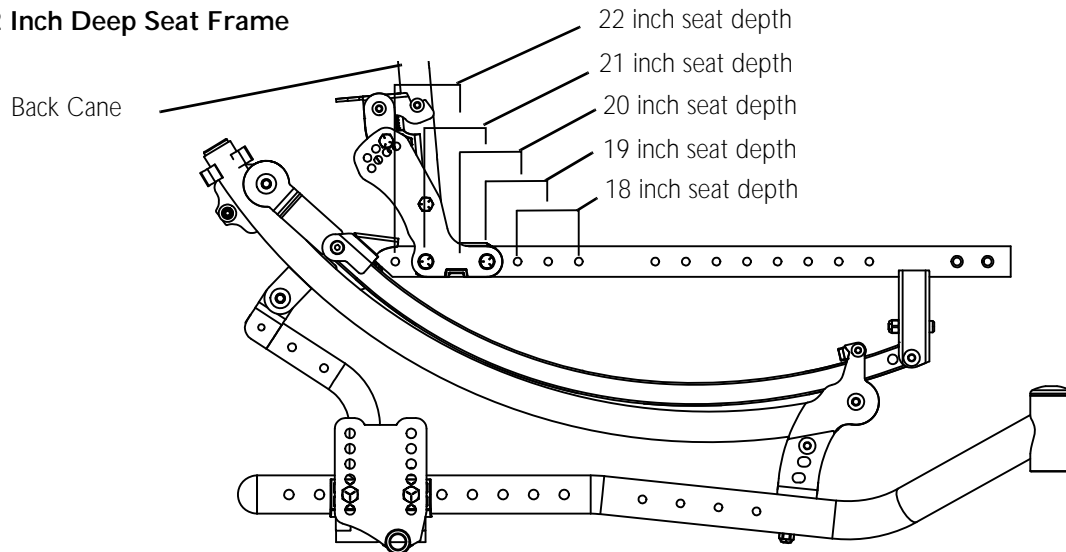
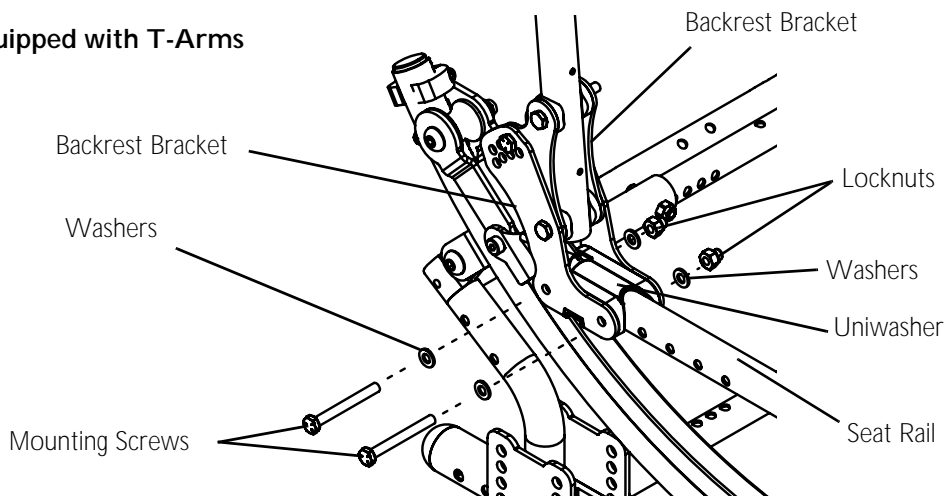


FIGURE 8.10 Adjusting the Seat Depth

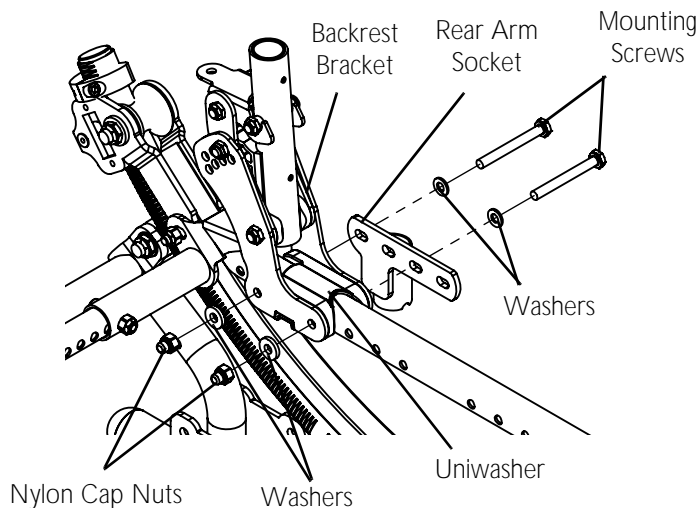


7. Perform one of the following:
  - A. Solara equipped with T-arms - remove the two mounting screws, uniwasher, four washers, and two nylon cap nuts that secure the backrest bracket to the seat rail.
  - B. Solara equipped with non flip back arms - remove the two mounting screws, one uniwasher, four washers, and two nylon cap nuts that secure the rear arm socket and backrest bracket to the seat rail.
  - C. Solara equipped with flip back arms - remove the two mounting screws, uniwasher, four washers, and two nylon cap nuts that secure the backrest bracket and flip back arm bracket to the seat rail.
8. Repeat STEP 4 for remaining backrest bracket.

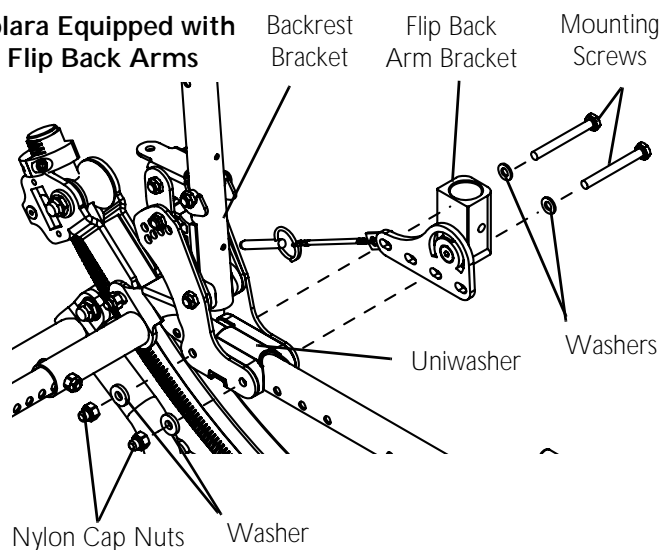
#### Solara Equipped with T-Arms



#### Solara Equipped with Non Flip Back Arms



#### Solara Equipped with Flip Back Arms



**FIGURE 8.11** Removing/Installing Backrest Brackets/Back Cane Assembly

## Installing Backrest Bracket/Back Cane Assembly

NOTE: For this procedure, refer to FIGURE 8.11 on page 65, and FIGURE 8.12 on page 67.

1. Align uniwashers and backrest brackets with the corresponding mounting holes determined in Removing Backrest Brackets/Back Cane Assembly on page 62.
2. Perform one of the following:
  - A. Solara equipped with T -arms - Secure the backrest bracket to the seat rail with the two mounting screws, uniwasher, four washers, and two nylon cap nuts. Tighten securely (FIGURE 8.11).
  - B. Solara equipped with non flip back arms - Secure the rear arm socket and backrest bracket to the seat rail with two mounting screws, one uniwasher, four washers, and two nylon cap nuts. Tighten securely (FIGURE 8.11).
  - C. Solara equipped with flip back arms - Secure the backrest bracket and flip back arm bracket to the seat rail with two mounting screws, uniwasher, four washers, and two nylon cap nuts. Tighten securely (FIGURE 8.11).
3. Perform one of the following:
  - A. For 12 - 16 inch deep seat frames and 15 - 19 inch deep seat frames:
    - i. Position one seat pan mounting bracket on each seat rail in front of backrest bracket (Detail "A" in FIGURE 8.12).
    - ii. Loosely secure crossbrace tube to rear seat pan mounting brackets (crossbrace assembly) with two mounting screws and locknuts (Detail "B" in FIGURE 8.12).
  - B. For 18 -22 inch deep seat frames:
    - i. Position one seat pan mounting bracket on each seat rail over head of mounting screw in seat rail. (Detail "D" in FIGURE 8.5)
    - ii. Secure crossbrace tube to rear seat pan mounting brackets (crossbrace assembly) with two mounting screws and locknuts (Detail "B" in FIGURE 8.12).
4. Install the seat pan. Refer to Install the Seat Pan on page 58.

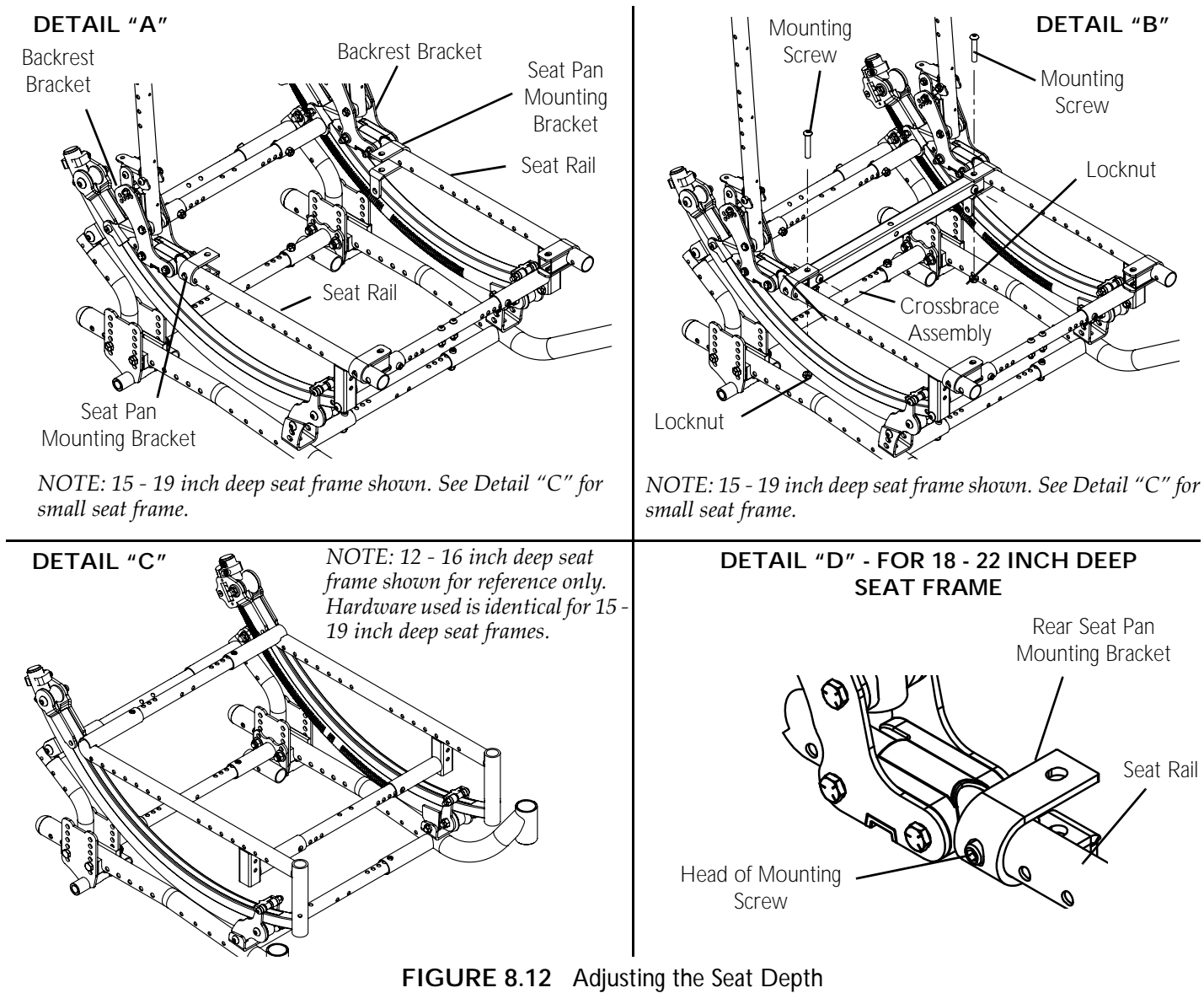


FIGURE 8.12 Adjusting the Seat Depth

## Adjusting Seat Pan Height

### Converting from Drop Mount to Flush Mount (12 -16 and 15 -19 Inch Deep Seat Frames)

*NOTE: The 12-16 and 15 -19 inch deep seat frames have the same attaching hardware and corresponding mounting locations except where noted.*

#### Removing Seat Pan Attaching Hardware

*NOTE: For this procedure, refer to FIGURE 8.13 on page 68.*

1. Remove the cushion from the seat pan.
2. Remove the  $1\frac{3}{4}$  inch mounting screws and thin locknuts that secure the front seat pan mounting brackets to the underside of the seat pan. Set hardware aside.
3. Remove the two  $\frac{5}{8}$  inch mounting screws and thin locknuts that secure the crossbrace tube to the rear seat pan mounting brackets.
4. Remove the  $1\frac{3}{4}$  inch mounting screw (Black) and locknut that secures the rear of the seat pan to the crossbrace tube.

5. Remove the two 1<sup>1</sup>/<sub>4</sub> inch mounting screws and locknuts that secure the front of the seat pan to the front crossbrace tube.
6. Remove the seat pan.
7. Remove the 1<sup>3</sup>/<sub>4</sub> inch mounting screws and thin locknuts that secure the rear seat pan mounting bracket and block spacer in place.
8. Remove the seat pan mounting brackets and crossbrace tube from the wheelchair frame.

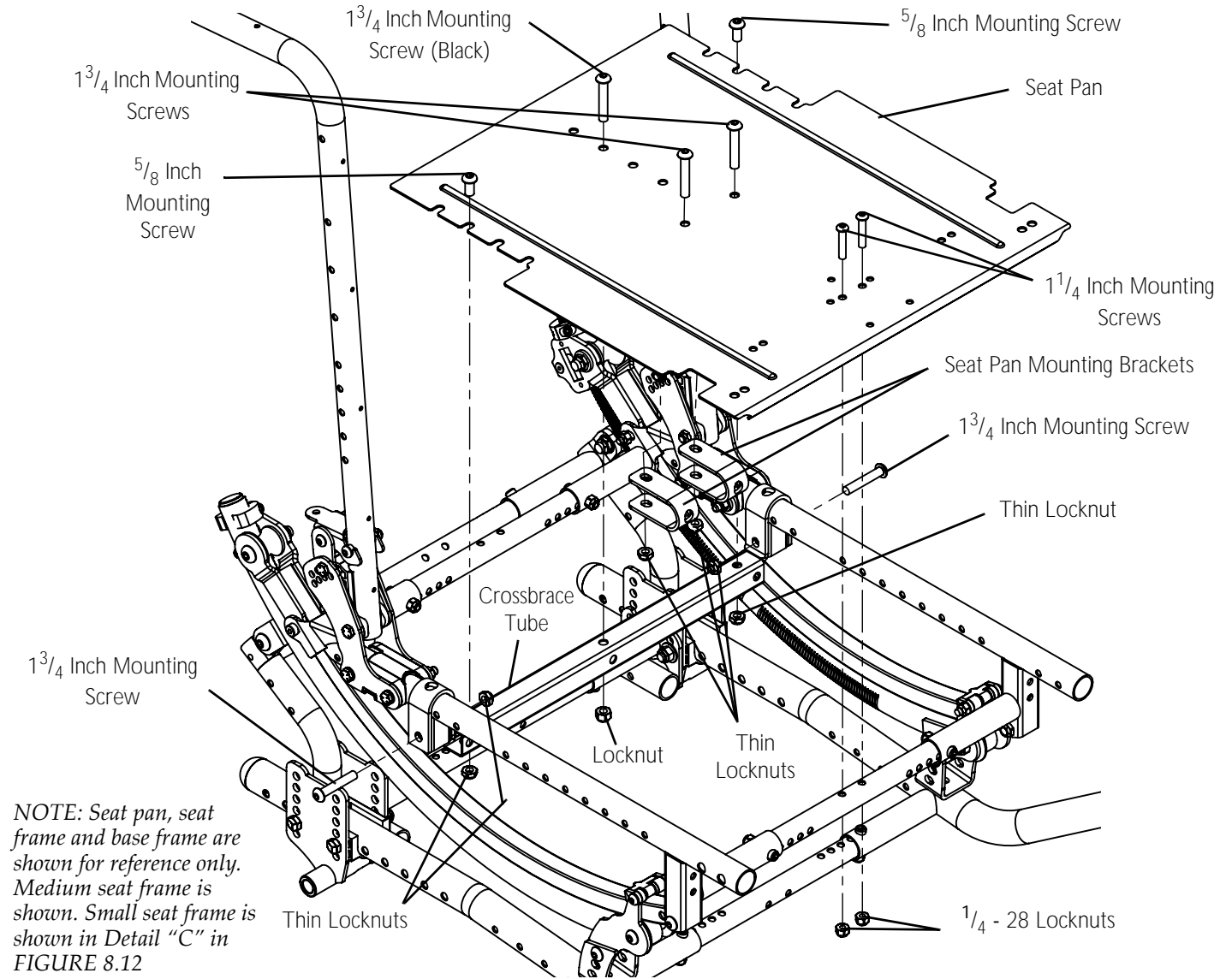


FIGURE 8.13 Adjusting Seat Pan Height - Removing Seat Pan Attaching Hardware

**Installing Seat Pan Attaching Hardware**

*NOTE: For this procedure, refer to FIGURE 8.14 on page 70 and FIGURE 8.15 on page 71.*

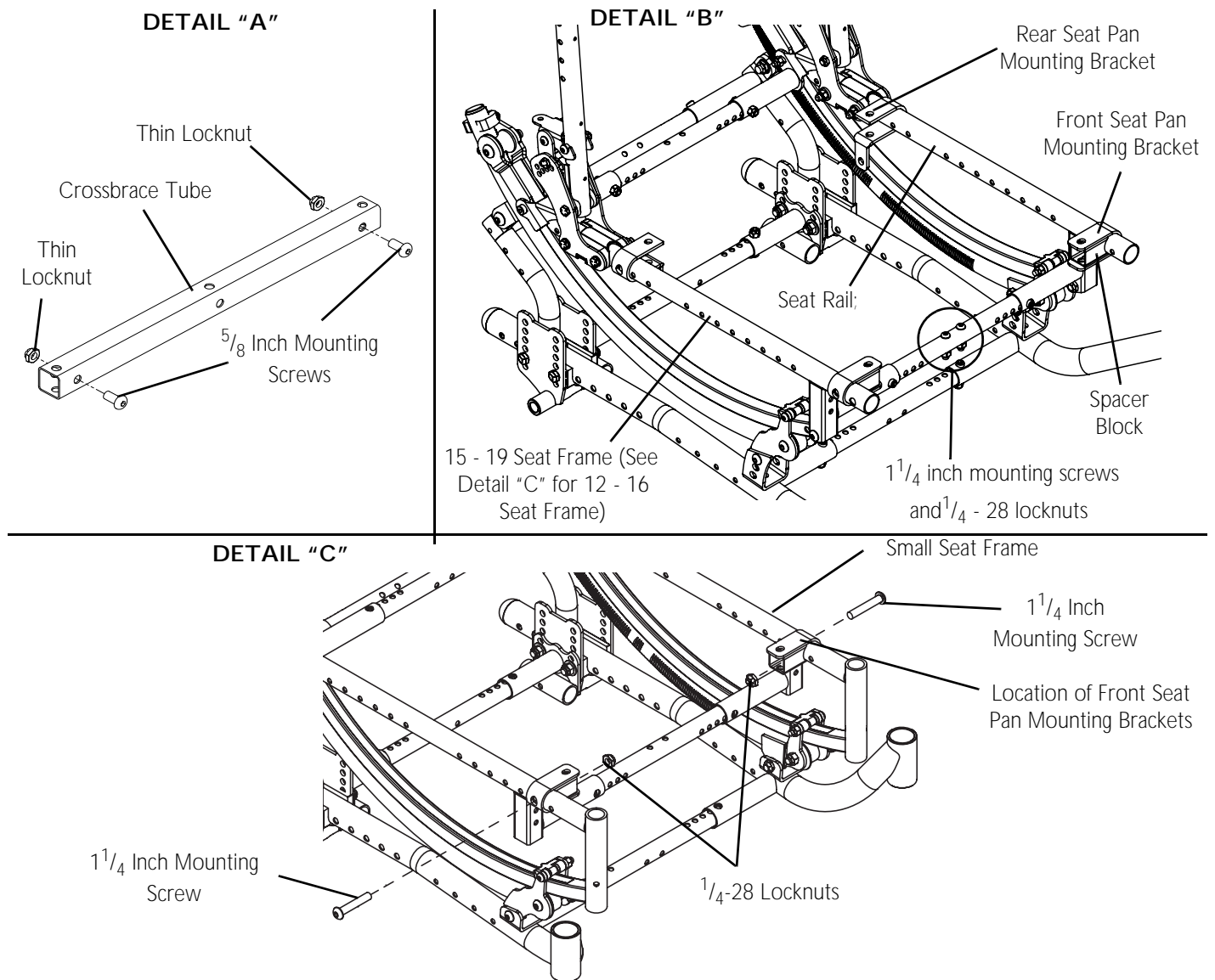
1. Before installing seat pan in drop mount position, take inventory of components/hardware and compare to list below:

DESCRIPTION	QUANTITY
Rear Seat Pan Mounting Bracket	2
Front Seat Pan Mounting Bracket	2
Spacer Block	2
1 <sup>3</sup> / <sub>4</sub> Inch Mounting Screw	4
Thin Locknuts	6
1 <sup>3</sup> / <sub>4</sub> Inch Black Mounting Screw	1
<sup>5</sup> / <sub>16</sub> -24 Locknut	1
<sup>5</sup> / <sub>8</sub> Inch Mounting Screws	2
<sup>1</sup> / <sub>4</sub> - 28 Locknut	2
1 <sup>1</sup> / <sub>4</sub> Inch Mounting Screws	2

2. Secure the <sup>5</sup>/<sub>16</sub> inch mounting screws and thin locknuts to the crossbrace tube (Detail "A" in FIGURE 8.14). Tighten securely.
3. Secure the two 1<sup>1</sup>/<sub>4</sub> inch mounting screws and <sup>1</sup>/<sub>4</sub> - 28 locknuts to the front crossbrace tube (Detail "B" in FIGURE 8.14).
4. Position the rear seat pan mounting brackets on the seat rails as shown Detail "B" in FIGURE 8.14.
5. Perform one of the following:
- A. For 15 - 19 Inch Deep Seat Frame
- i. Position the front seat pan mounting brackets and spacer blocks on the seat rails as shown Detail "B" in FIGURE 8.14.

*NOTE: To perform STEP B, kit # 1154969 will need to be ordered to obtain the necessary mounting screws and locknuts for the front seat pan mounting brackets.*

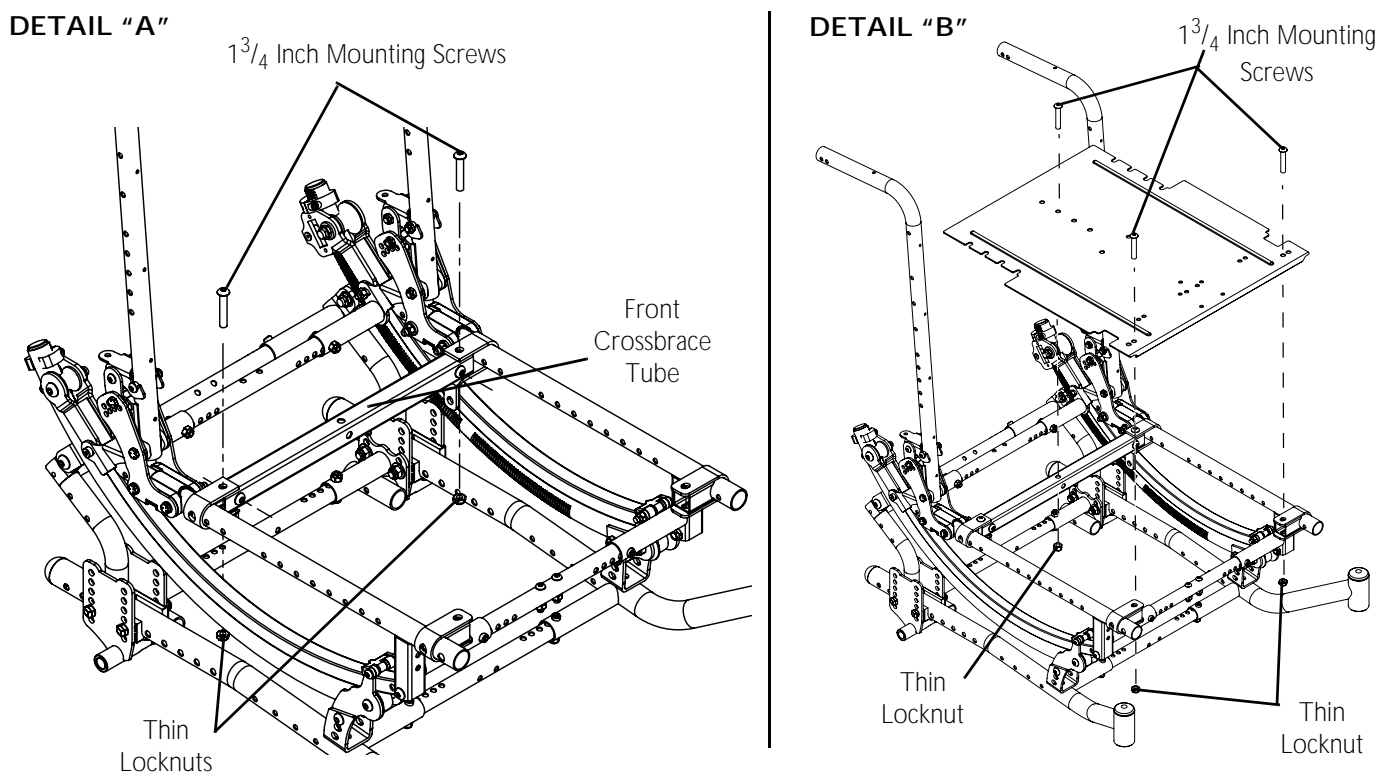
- B. For 12 - 16 Inch Deep Seat Frames:
- i. Install 1<sup>1</sup>/<sub>4</sub> inch mounting screw and locknut in seat rail as shown in Detail "C" in FIGURE 8.14.
- ii. Position the front seat pan mounting brackets over the head of the mounting screw from STEP i.
- iii. Secure front seat pan mounting brackets and spacer blocks on the seat rails as shown in Detail "C" in FIGURE 8.14.



**FIGURE 8.14** Adjusting Seat Pan Height - Positioning Seat Pan Mounting Brackets

*NOTE: When performing STEP 6, wider width seat pans will require that the 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts that secure the crossbrace tube (from STEP 4) will be used to secure the seat pan in position as well by utilizing the slots in the seat pan.*

6. Secure the crossbrace tube to the rear seat pan mounting brackets (and seat pan if necessary) with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and thin locknuts (Detail "A" in FIGURE 8.15).
7. Secure the front of the seat pan to the front seat pan mounting brackets and spacer blocks with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and thin locknuts (Detail "B" in FIGURE 8.15).
8. Secure the rear of the seat pan to the crossbrace tube with one 1<sup>3</sup>/<sub>4</sub> inch mounting screw (Black) and locknut (Detail "B" in FIGURE 8.15).



*NOTE: Seat pan, seat frame and base frame are shown for reference only. 15 - 19 inch deep seat frame is shown. For 12 - 16 inch deep seat frame illustration, see detail "A" in FIGURE 8.14.*

**FIGURE 8.15** Installing Seat Pan Attaching Hardware

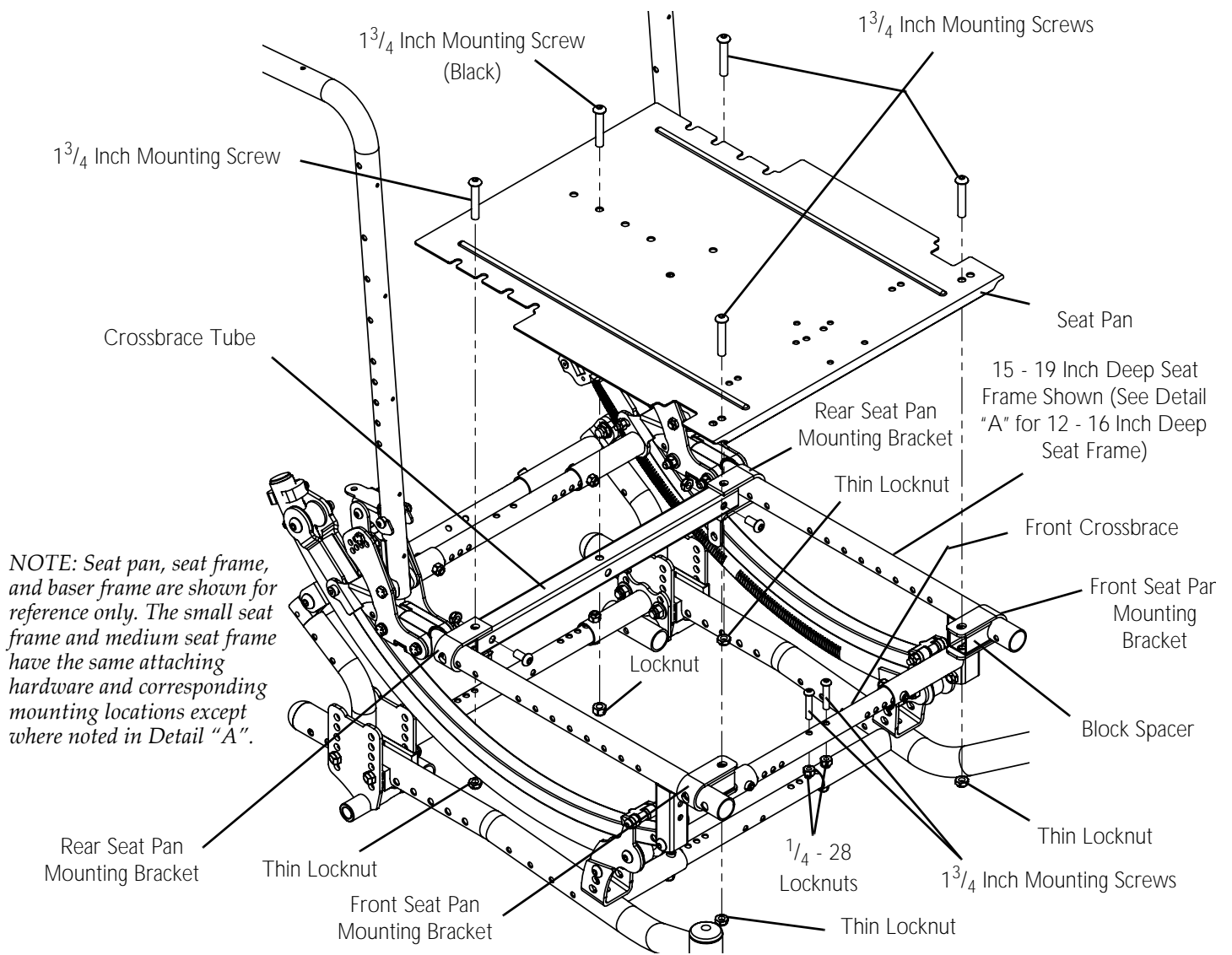
### Converting from Flush Mount to Drop Down (12 -16 Inch Deep Seat Frames and 15 - 19 Inch Deep Seat Frames)

*NOTE: The 12-16 inch seat frame and 15 - 19 inch deep seat frame have the same attaching hardware and corresponding mounting locations except where noted.*

#### Removing the Seat Pan Attaching Hardware

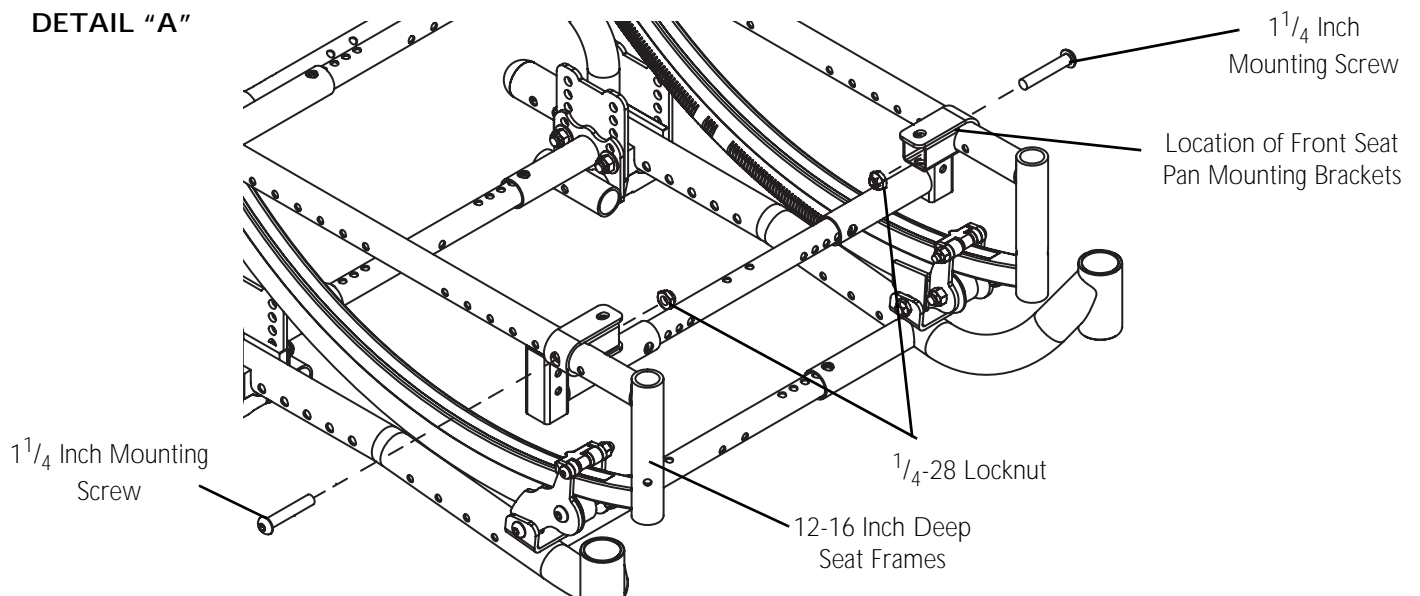
*NOTE: For this procedure, refer to FIGURE 8.16 on page 72.*

1. Remove the cushion from the seat pan.
2. Remove the two  $1\frac{3}{4}$  inch mounting screws and thin locknuts that secures the seat pan to the front seat pan mounting bracket.
3. Remove the one  $1\frac{3}{4}$  inch mounting screw (black) and locknut that secures the rear of the seat pan to the crossbrace assembly.
4. Remove the two  $1\frac{3}{4}$  inch mounting screws and thin locknuts that secures the seat pan to the rear seat pan mounting bracket.
5. Remove the seat pan, crossbrace tube, and rear seat pan mounting brackets.
6. Remove the block spacers from the front seat pan mounting brackets.
7. Remove the front seat pan mounting brackets from the seat rails.
8. For small seat frame, remove the two  $1\frac{1}{4}$  inch mounting screws and locknuts that position the front seat mounting brackets (Detail "A").
9. Remove the two  $1\frac{1}{4}$  inch mounting screws and  $\frac{1}{4}$ -28 locknuts from the front crossbrace.



NOTE: Seat pan, seat frame, and baser frame are shown for reference only. The small seat frame and medium seat frame have the same attaching hardware and corresponding mounting locations except where noted in Detail "A".

**DETAIL "A"**



**FIGURE 8.16** Removing the Seat Pan Attaching Hardware



### Installing the Seat Pan Attaching Hardware

NOTE: For this procedure, refer to FIGURE 8.17 on page 73 and FIGURE 8.19 on page 75.

- Before installing seat pan in drop mount position, take inventory of components/hardware and compare to list below:

DESCRIPTION	QUANTITY
Rear Seat Pan Mounting Bracket	2
Front Seat Pan Mounting Bracket	2
Spacer Block	2
1 <sup>3</sup> / <sub>4</sub> Inch Mounting Screw	4
Thin Locknuts	6
1 <sup>3</sup> / <sub>4</sub> Inch Black Mounting Screw	1
<sup>5</sup> / <sub>16</sub> -24 Locknut	1
<sup>5</sup> / <sub>8</sub> Inch Mounting Screws	2
<sup>1</sup> / <sub>4</sub> - 28 Locknut	2
1 <sup>1</sup> / <sub>4</sub> Inch Mounting Screws	2

- Secure the front seat pan mounting brackets underneath the seat pan with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and thin locknuts (Detail "A" in FIGURE 8.17). Tighten securely.
- Remove the two <sup>5</sup>/<sub>8</sub> inch mounting screws and thin locknuts from the seat pan crossbrace tube and set aside (Detail "B" in FIGURE 8.17).

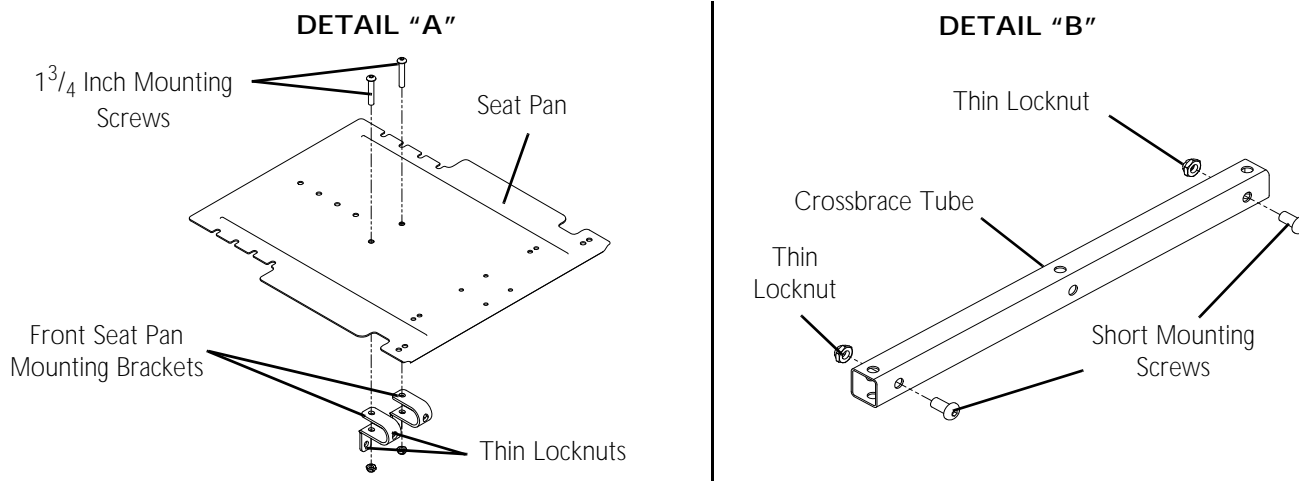
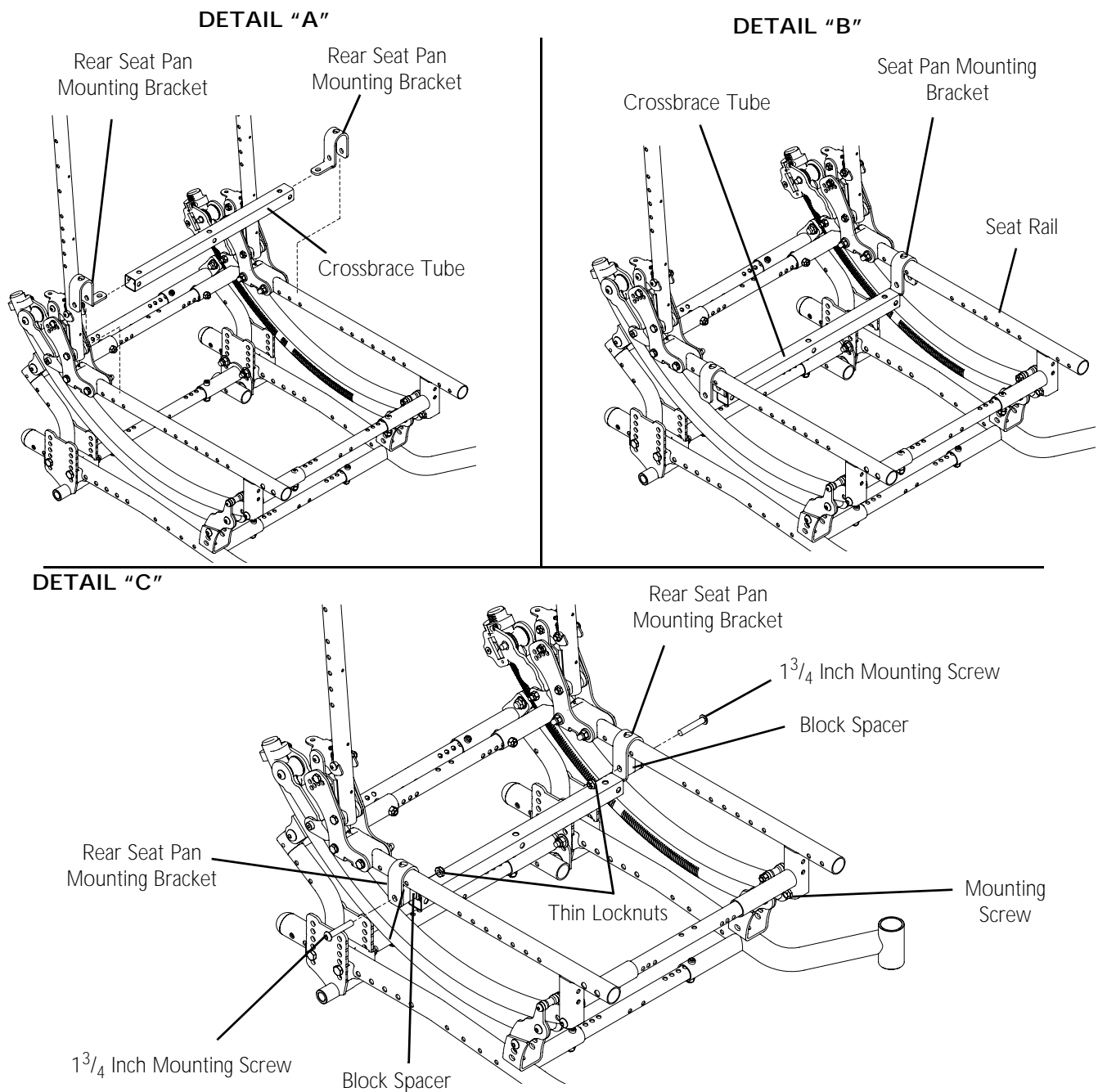


FIGURE 8.17 Removing Seat Pan Mounting Hardware

- Install one rear seat pan mounting bracket into each end of the crossbrace tube (Detail "A" in FIGURE 8.18 on page 74).
- Position the crossbrace tube with rear seat pan mounting brackets on the seat rails near the back canes (Detail "B" in FIGURE 8.18 on page 74).
- Install one block spacer into each rear seat pan mounting bracket (Detail "C" in FIGURE 8.18 on page 74).
- Secure rear seat pan mounting brackets and block spacers in place with a 1<sup>3</sup>/<sub>4</sub> inch mounting screw and thin locknut (Detail "C" in FIGURE 8.18 on page 74). Tighten securely.



*NOTE: Seat frame and base frame are shown for reference only. 15-19 inch deep seat frame is shown. For 12 - 16 inch deep seat frame illustration, see detail "A" in FIGURE 8.16.*

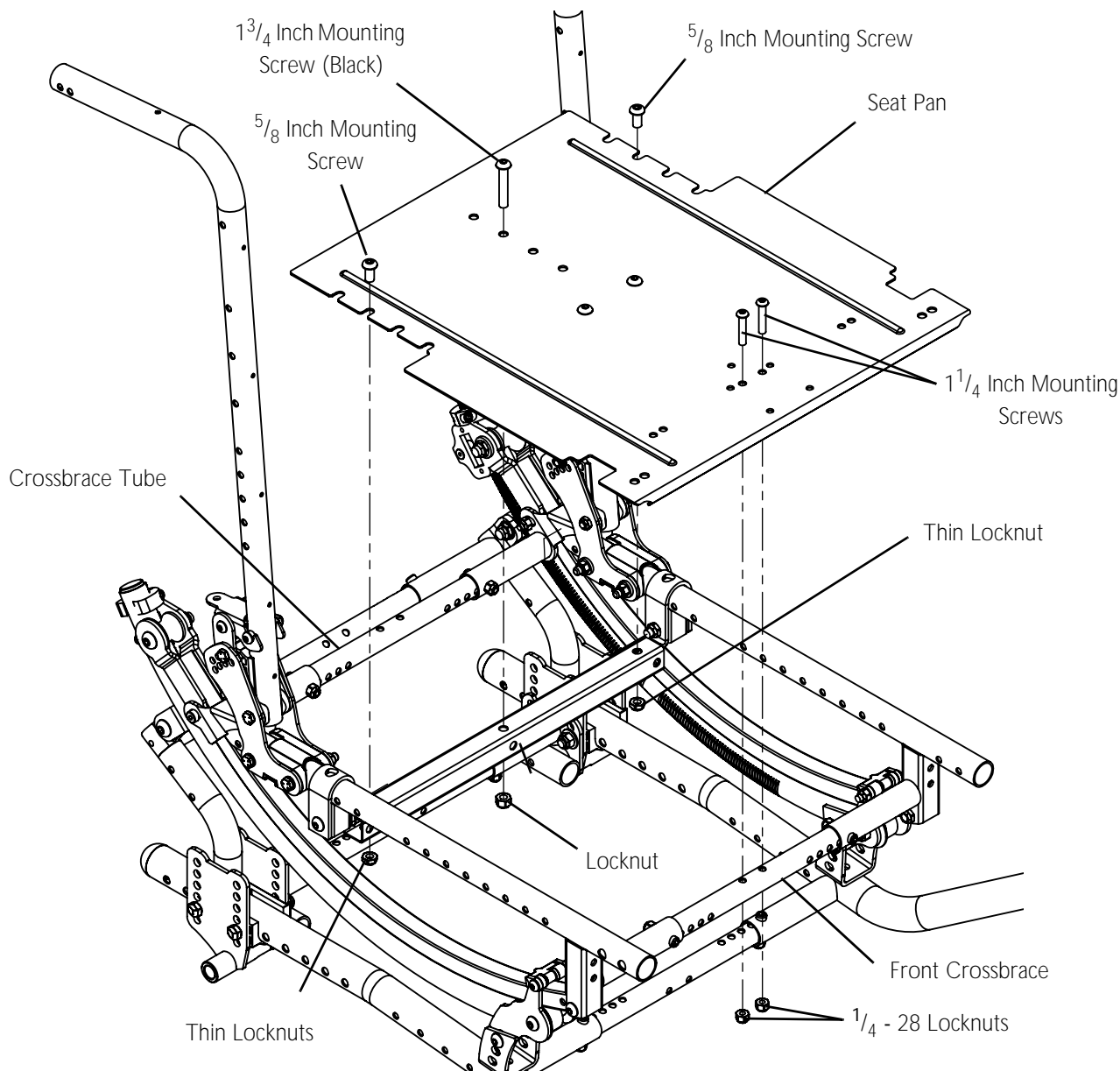
**FIGURE 8.18** Installing Seat Pan Mounting Hardware

8. Position the seat pan onto the crossbrace tube and front crossbrace (FIGURE 8.19).
9. Secure the rear of the seat pan to the crossbrace tube with one 1<sup>3</sup>/<sub>4</sub> inch mounting screw (Black) and locknut(FIGURE 8.19). Tighten securely.

*NOTE: When performing STEP 10, wider width seat pans will require that the 5/8 inch mounting screw secure the seat pan in place by utilizing the slots in the seat pan (FIGURE 8.19).*

10. Secure the two 5/8 inch mounting screws and two thin locknuts to the crossbrace tube (FIGURE 8.19). Tighten securely.

11. Secure the front of the seat pan to the front crossbrace with the two  $1\frac{1}{4}$  inch mounting screws and  $1\frac{1}{4}$ - 28 locknuts (FIGURE 8.19). Tighten securely.



*NOTE: Seat pan, seat frame and base frame are shown for reference only. 15 - 19 inch deep seat frame is shown. For 12 - 16 inch deep seat frame illustration, see detail "A" in FIGURE 8.16.*

**FIGURE 8.19** Installing the Seat Pan

## Converting from Flush Mount to Drop Down (18 - 22 Inch Deep Seat Frames)

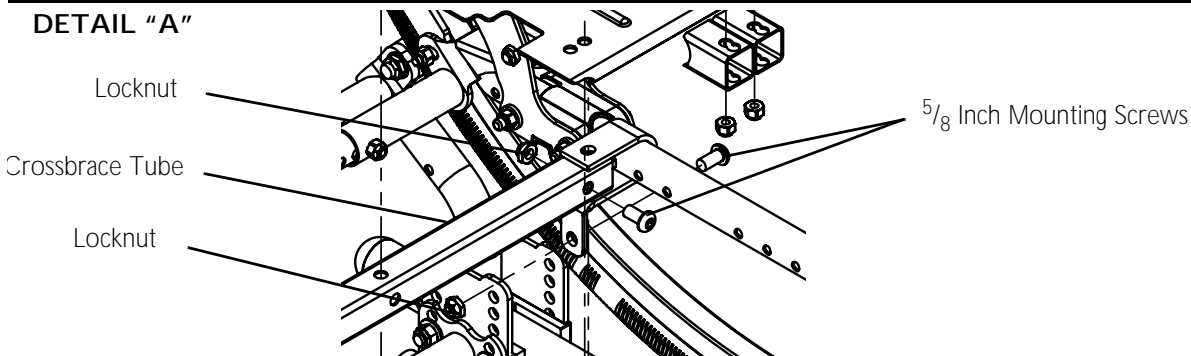
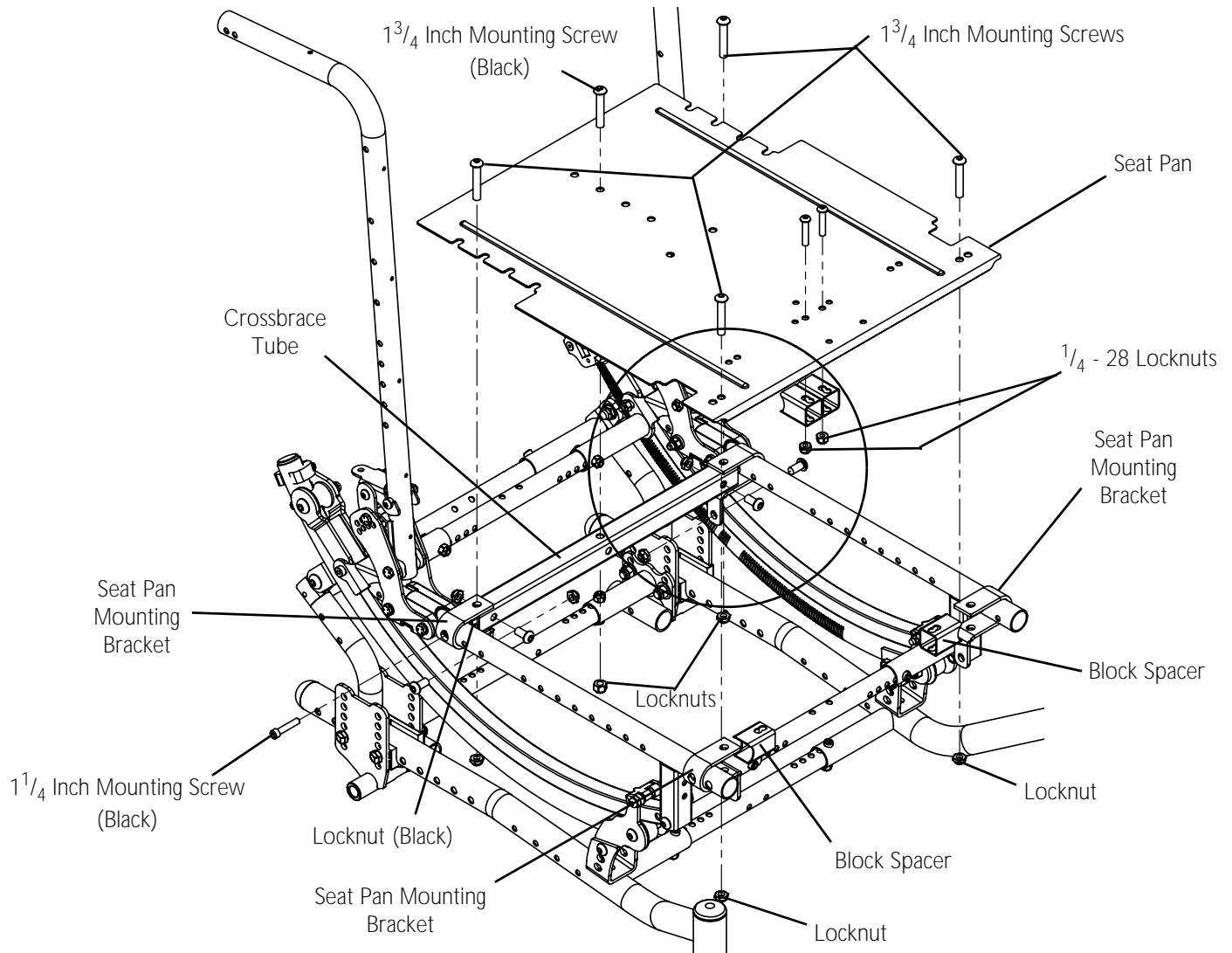
### Remove Seat Pan

*NOTE: For this procedure, refer to FIGURE 8.20 on page 76.*

1. Remove the seat cushion from the seat pan.
2. Remove the  $1\frac{3}{4}$  inch mounting screw (Black) and locknut that secures the rear (center) of the seat pan to the crossbrace tube.

SECTION 8—SEAT (WHEELCHAIRS BUILT BEFORE 4/5/2010)

3. Remove the four 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts that secure the seat pan to the seat pan mounting brackets.
4. Remove the seat pan, two block spacers, four seat pan mounting brackets, and crossbrace tube.
5. Remove the two 1<sup>1</sup>/<sub>4</sub> inch mounting screws and locknuts that secure two block spacers to the seat pan.
6. Remove the two 5<sup>5</sup>/<sub>8</sub> inch mounting screws and locknuts that are secured to the seat pan mounting brackets (Detail "A").
7. Remove the two 5<sup>5</sup>/<sub>8</sub> inch mounting screws and locknuts that are secured to the crossbrace tube (Detail "A").
8. Remove the two 1<sup>1</sup>/<sub>4</sub> inch mounting screws (Black) and locknuts (Black) secured to the seat rail.



**FIGURE 8.20** Converting from Flush Mount to Drop Down (18 - 22 Inch Deep Seat Frames) - Remove Seat Pan

## Install Seat Pan

NOTE: For this procedure, refer to FIGURE 8.21.

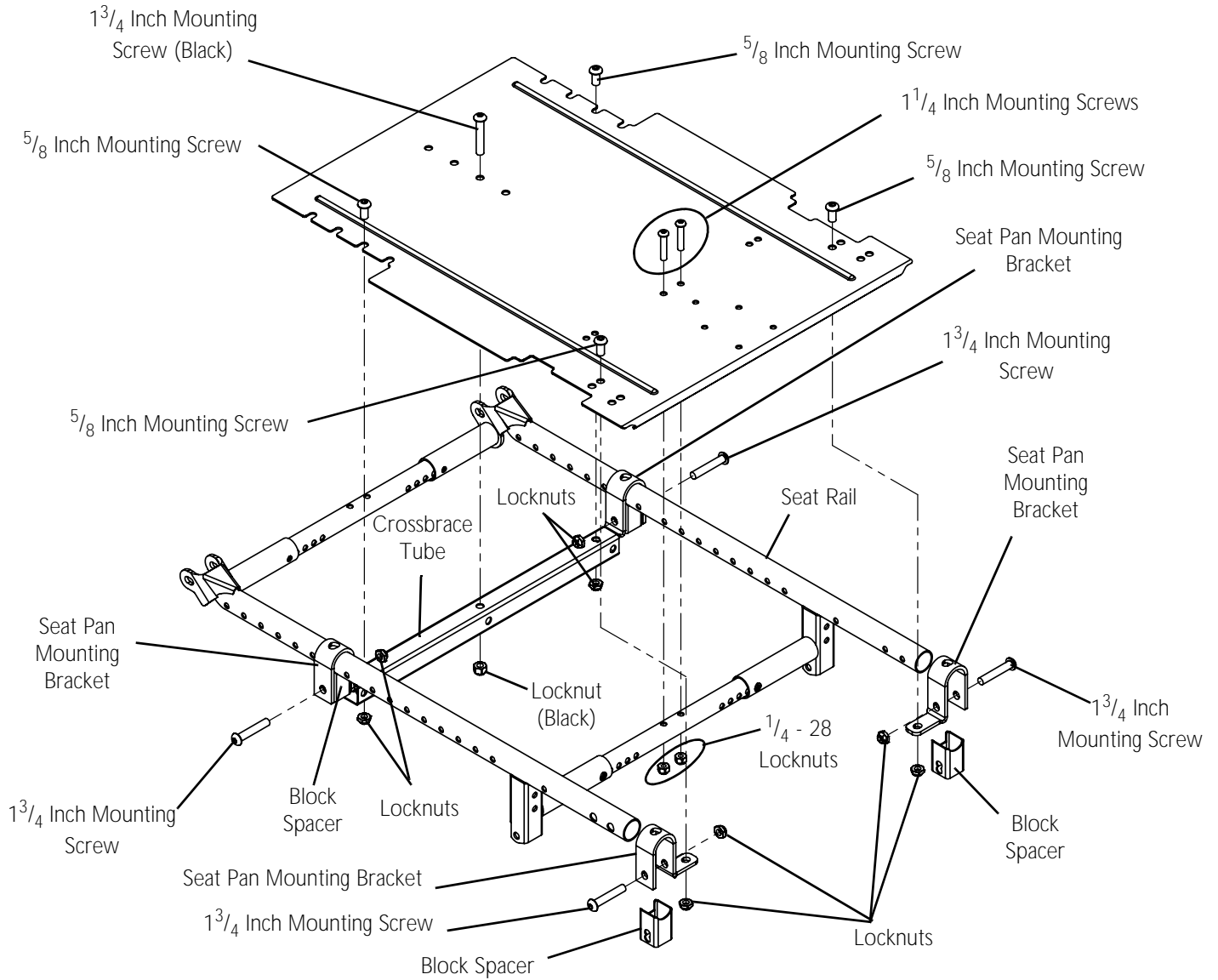
- Before installing seat pan in drop mount position, take inventory of components/hardware and compare to list below:

DESCRIPTION	QUANTITY
Seat Pan Mounting Bracket	4
Block Spacer	4
1 <sup>3</sup> / <sub>4</sub> Inch Mounting Screw	4
Locknuts	8
1 <sup>3</sup> / <sub>4</sub> Inch Mounting Screw (Black)	1
<sup>5</sup> / <sub>16</sub> -24 Locknut (Black)	1
<sup>5</sup> / <sub>8</sub> Inch Mounting Screws	4
<sup>1</sup> / <sub>4</sub> - 28 Locknut	4*
1 <sup>1</sup> / <sub>4</sub> Inch Mounting Screws	2
1 <sup>1</sup> / <sub>4</sub> Inch Mounting Screws (Black)	2*

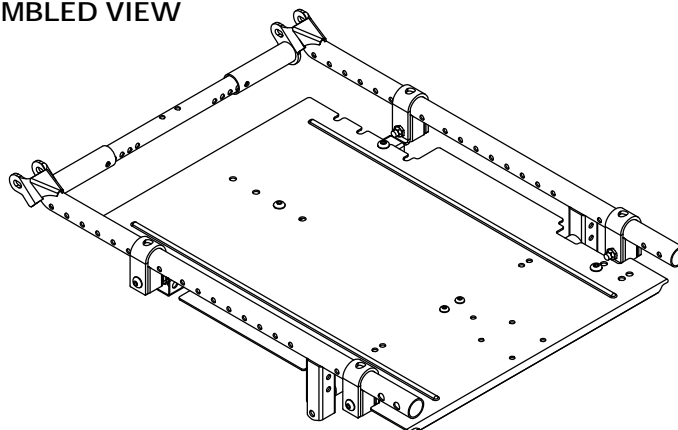
\*NOTE: Two of the <sup>1</sup>/<sub>4</sub>-28 locknuts and the two 1<sup>1</sup>/<sub>4</sub> inch mounting screws (Black) will not be used. Save for future use.

- Place one seat pan mounting bracket on each end of the crossbrace tube.
- Position crossbrace tube and seat pan mounting brackets on the seat rails near the rear of the wheelchair.
- Position a block spacer in each seat pan mounting bracket.
- Secure the seat pan mounting brackets and block spacers to the seat rail with 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts.
- Secure one seat pan mounting bracket and block spacer to the front of each seat rail with 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts. Tighten securely.
- Secure the rear (center) of the seat pan to the crossbrace tube with one 1<sup>3</sup>/<sub>4</sub> inch mounting screw (Black) and locknut (Black). Tighten securely.
- Secure the seat pan to the each end of the crossbrace tube with two <sup>5</sup>/<sub>8</sub> inch mounting screws and locknuts. Tighten securely.
- Secure the front of the seat pan to the seat pan mounting brackets with <sup>5</sup>/<sub>8</sub> inch mounting screws and locknuts. Tighten securely.
- Secure the middle of the seat pan to the front crossbrace with two 1<sup>1</sup>/<sub>4</sub> inch mounting screws and <sup>1</sup>/<sub>4</sub>- 28 locknuts. Tighten securely.
- Install cushion on seat pan.

**EXPLODED VIEW**



**ASSEMBLED VIEW**



**FIGURE 8.21** Converting from Flush Mount to Drop Down (18 - 22 Inch Deep Seat Frames) - Install Seat Pan

## Converting from Drop Mount to Flush Mount (18 - 22 Inch Deep Seat Frames)

### Remove Seat Pan

NOTE: For this procedure, refer to FIGURE 8.22.

1. Remove cushion from seat pan.
2. Remove the two  $1\frac{1}{4}$  inch mounting screws and  $1\frac{1}{4}$ - 28 locknuts that secure the middle of the seat pan to the front crossbrace.
3. Remove the  $\frac{5}{8}$  inch mounting screws and locknuts that secure the front of the seat pan to the seat pan mounting brackets.
4. Remove the two  $\frac{5}{8}$  inch mounting screws and locknuts that secure the seat pan to each end of the crossbrace tube.
5. Remove the  $1\frac{3}{4}$  inch mounting screw (Black) and locknut (Black) that secure the rear (center) of the seat pan to the crossbrace tube.
6. Remove the seat pan.
7. Remove the  $1\frac{3}{4}$  inch mounting screws and locknuts that secure the block spacers to the seat pan mounting brackets.
8. Remove the crossbrace tube and seat pan mounting brackets from the seat rails.

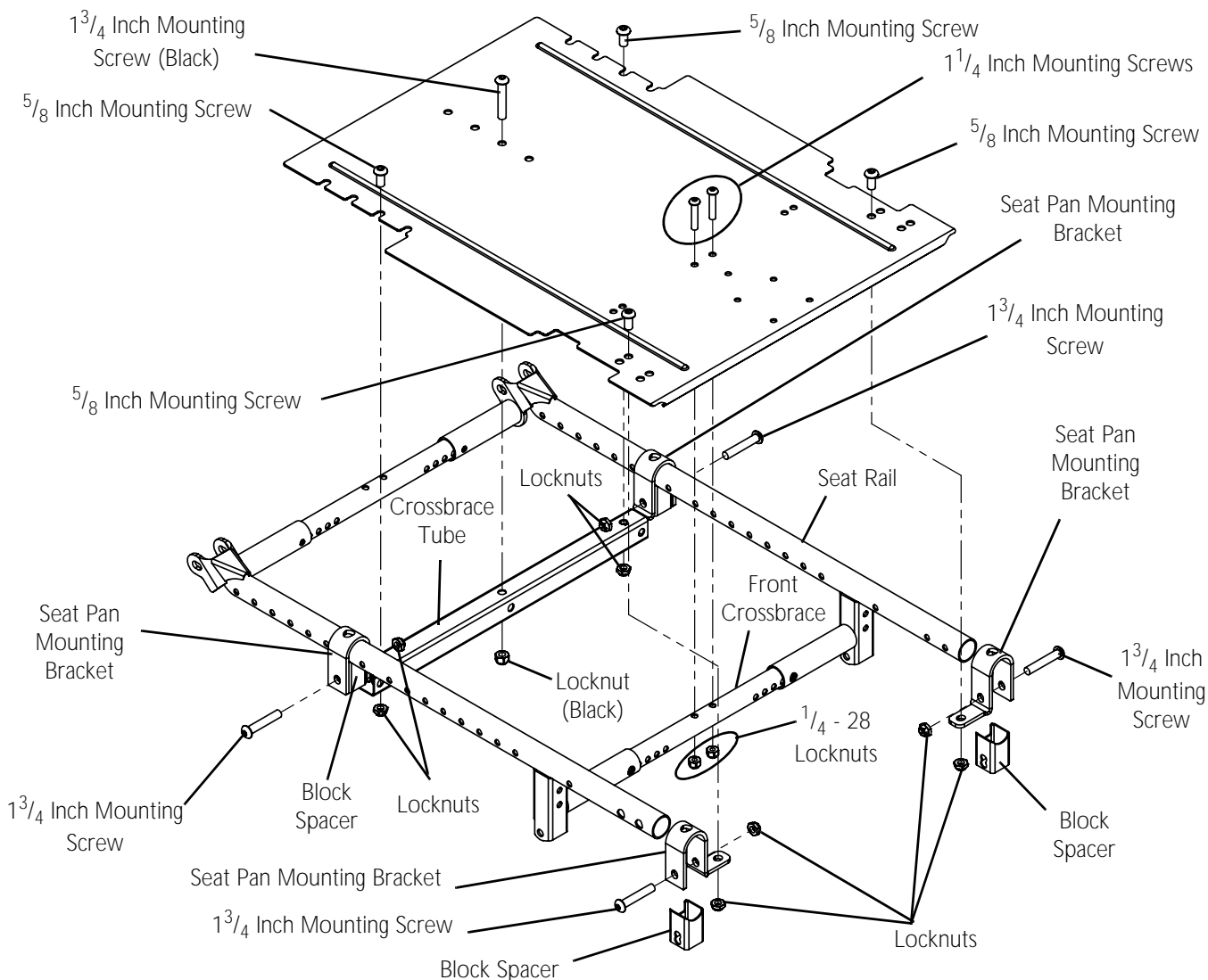


FIGURE 8.22 Converting from Drop Mount to Flush Mount (18 - 22 Inch Deep Seat Frames) - Remove Seat Pan

**Install Seat Pan**

NOTE: For this procedure, refer to FIGURE 8.23 on page 81 and FIGURE 8.24 on page 82.

1. Before installing seat pan in flush mount position, take inventory of components/hardware and compare to list below:

DESCRIPTION	QTY
Seat Pan Mounting Bracket	4
Block Spacer	4
1 <sup>3</sup> / <sub>4</sub> Inch Mounting Screw	4
Locknuts	8
1 <sup>3</sup> / <sub>4</sub> Inch Mounting Screw (Black)	1

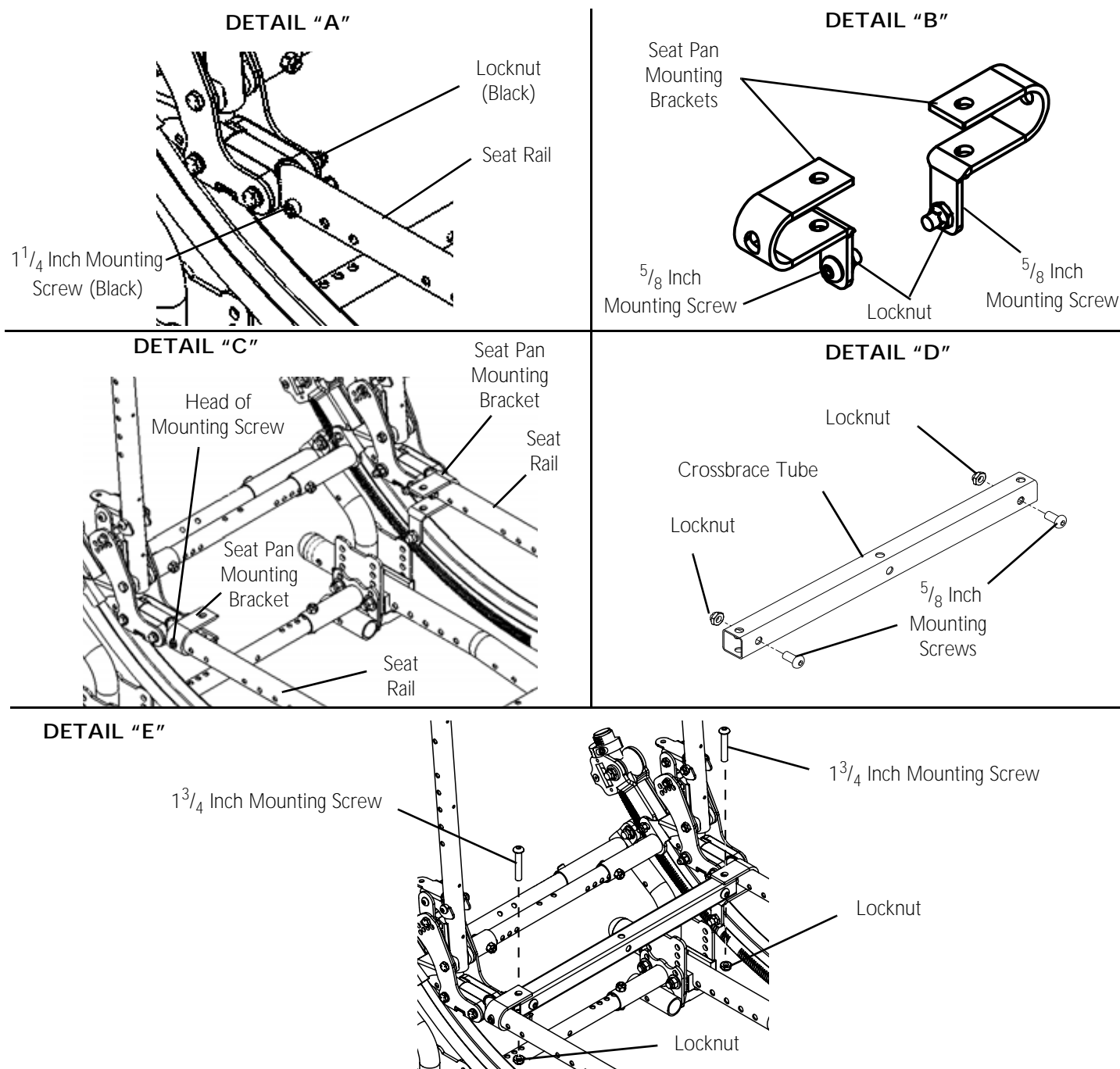
DESCRIPTION	QTY
<sup>5</sup> / <sub>16</sub> -24 Locknut (Black)	1
<sup>5</sup> / <sub>8</sub> Inch Mounting Screws	4
<sup>1</sup> / <sub>4</sub> - 28 Locknut	2*
1 <sup>1</sup> / <sub>4</sub> Inch Mounting Screws	2
1 <sup>1</sup> / <sub>4</sub> Inch Mounting Screws (Black)	2*

\*NOTE: Two of <sup>1</sup>/<sub>4</sub>-28 locknuts and the two 1<sup>1</sup>/<sub>4</sub> inch mounting screws (Black) will be required for conversion from drop mount to flush mount. Order kit #1159538.

NOTE: When performing STEP 1, ensure that the head of the mounting screw is on the outside of the seat rail.

- Secure one 1<sup>1</sup>/<sub>4</sub> inch mounting screw (Black) and locknut (Black) to each seat rail (Detail "A").
- Secure one <sup>5</sup>/<sub>8</sub> inch mounting screw and locknut to two seat pan mounting brackets (Detail "B").
- Position the seat pan mounting brackets from STEP 2 over the head of the mounting screws installed in STEP 1 (Detail "C").
- Secure two <sup>5</sup>/<sub>8</sub> inch mounting screws and locknuts to the crossbrace tube (Detail "D").
- Secure the crossbrace tube to the seat pan mounting brackets with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts (Detail "E").





**FIGURE 8.23** Converting from Drop Mount to Flush Mount (18 - 22 Inch Deep Seat Frames) - Install Seat Pan

7. Secure two seat pan mounting brackets to the underside of the seat pan with two  $1\frac{1}{4}$  inch mounting screws and locknuts.
8. Position the remaining two seat pan mounting brackets and block spacers on the front of each seat rail (Detail "B").

*NOTE: When performing STEP 8, the  $1\frac{3}{4}$  inch mounting screws that secure the crossbrace tube in place may need to be backed out slightly to accommodate wider seat pans. Refer to Wider Seat Pans on page 55.*

9. Secure the seat pan to the crossbrace tube with one  $1\frac{3}{4}$  inch mounting screw (Black) and locknut (Black). Tighten securely.
10. Secure the seat pan to the seat pan mounting brackets with  $1\frac{3}{4}$  inch mounting screws and locknuts. Tighten securely.

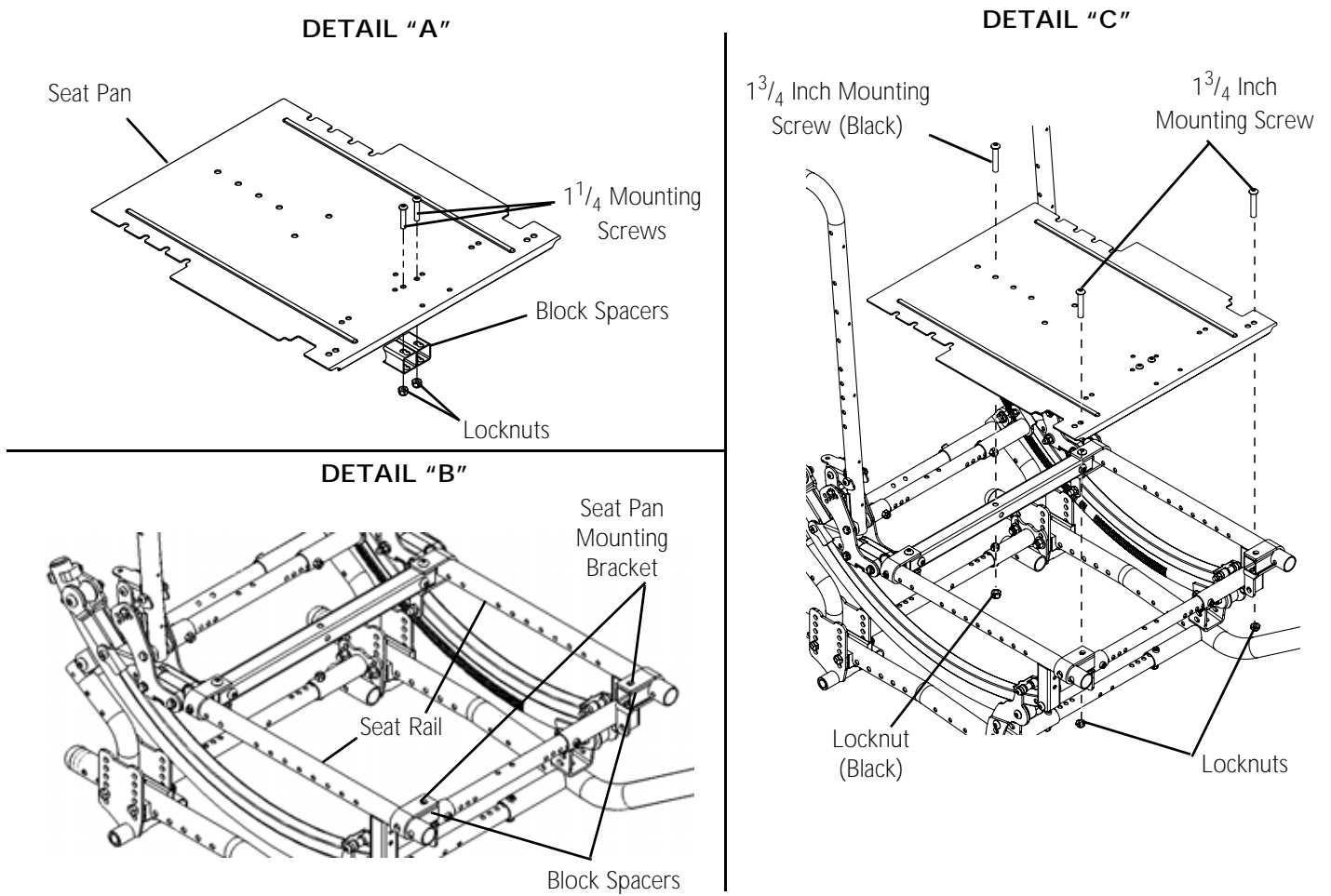


FIGURE 8.24 Installing Seat Pan

## SECTION 9—SEAT (WHEELCHAIRS BUILT AFTER 4/5/2010)

### ⚠ WARNING

After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

*NOTE: For wheelchairs built before 4/5/2010, refer to section 8.*

### Definition of Terms Used In This Section

Small Frame = 12-16 inch deep seat frames

Medium Frame = 15-19 inch deep seat frames

Large Frame = 18-22 inch deep seat frames

### Remove the Seat Pan (Wheelchairs Built After 4/5/2010)

*NOTE: For this procedure, refer to FIGURE 9.1.*

#### Flush Mount

##### Small and Medium Frames

1. Remove the two  $1\frac{3}{4}$  inch mounting screws and locknuts that secure the front of the seat pan to the seat pan brackets.
2. Remove the  $1\frac{3}{4}$  inch mounting screw and locknut that secures the middle of the seat pan to the seat pan crossbrace assembly.

##### Large Frames

1. Remove the two  $\frac{5}{8}$  inch mounting screws and locknuts that secure the front of the seat pan to the seat pan long brackets
2. Remove the  $1\frac{3}{4}$  inch mounting screw and locknut that secures the middle of the seat pan to the seat pan crossbrace assembly.

#### Drop Mount

##### Small and Medium Frames

1. Remove the  $1\frac{3}{4}$  inch mounting screw and locknut that secures the middle of the seat pan to the seat pan crossbrace assembly.

*NOTE: When performing STEP 2, there are keyholes in the seat pan for mounting screws to slide out of.*

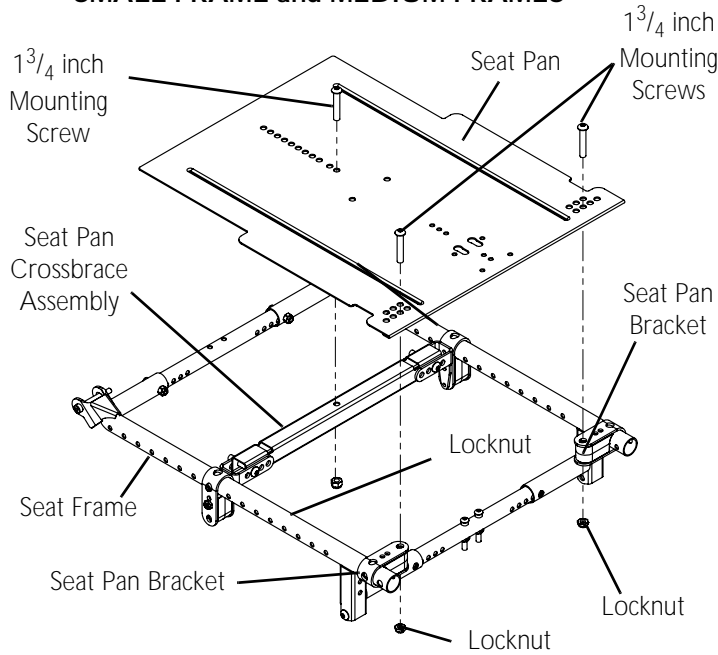
2. Slide the seat pan forward aligning keyholes in seat pan with the two mounting screws on front crossbrace.
3. Lift seat pan off of frame.

##### Large Frames

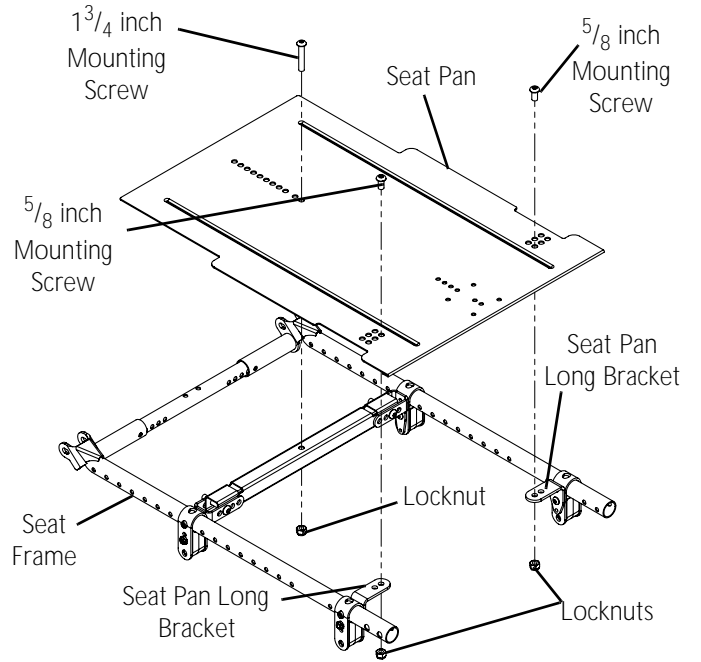
1. Remove the two  $\frac{5}{8}$  inch mounting screws and locknuts that secure the front of the seat pan to the seat pan long brackets
2. Remove the  $1\frac{3}{4}$  inch mounting screw and locknut that secures the middle of the seat pan to the seat pan crossbrace assembly.

**FLUSH MOUNT**

**SMALL FRAME and MEDIUM FRAMES**

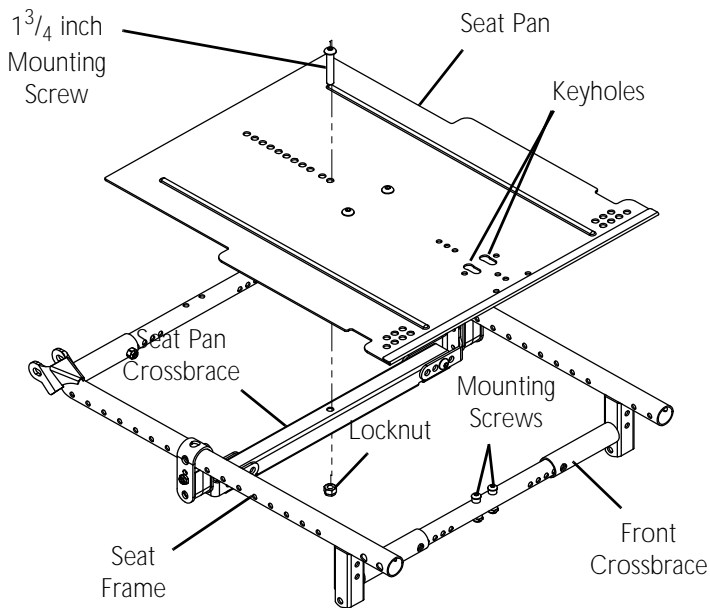


**LARGE FRAMES**

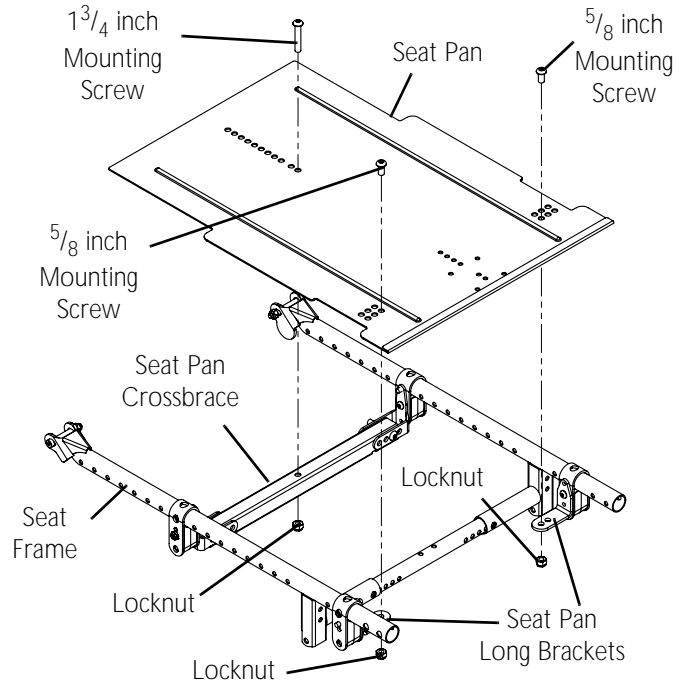


**DROP MOUNT**

**SMALL FRAME AND MEDIUM FRAMES**



**LARGE FRAMES**



*NOTE: Only the seat frame is shown for clarity.*

**FIGURE 9.1** Remove the Seat Pan (Wheelchairs Built After 4/5/2010)

## Installing the Seat Pan (Wheelchairs Built After 4/5/2010)

*NOTE: For this procedure, refer to FIGURE 9.1 on page 84.*

### Flush Mount

#### Small and Medium Frames

1. Secure the front of the seat pan to the seat pan brackets with two 1 <sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts. Tighten securely.
2. Secure the middle of the seat pan to the seat pan crossbrace with one 1 <sup>3</sup>/<sub>4</sub> inch mounting screw and locknut. Tighten securely.

#### Large Frames

1. Secure the front of the seat pan to the seat pan long brackets with two <sup>5</sup>/<sub>8</sub> inch mounting screws and locknuts. Tighten securely.
2. Secure the middle of the seat pan to the seat pan crossbrace with a mounting screw and locknut. Tighten securely.

### Drop Mount

#### Small and Medium Frames

1. Align the keyholes in the seat pan with the two mounting screws on front crossbrace.
2. Slide seat pan backward.
3. Secure the middle of the seat pan to the seat pan crossbrace assembly with a mounting screw and locknut. Tighten securely.

#### Large Frames

1. Secure the front of the seat pan to the seat pan long brackets with two mounting screws and locknuts. Tighten securely.
2. Secure the middle of the seat pan to the seat pan crossbrace assembly with mounting screw and locknut. Tighten securely.

## Adjusting Seat Pan Height (Wheelchairs Built After 4/5/2010)

### Converting From Flush Mount to Drop Mount (Small Frames and Medium Frames)

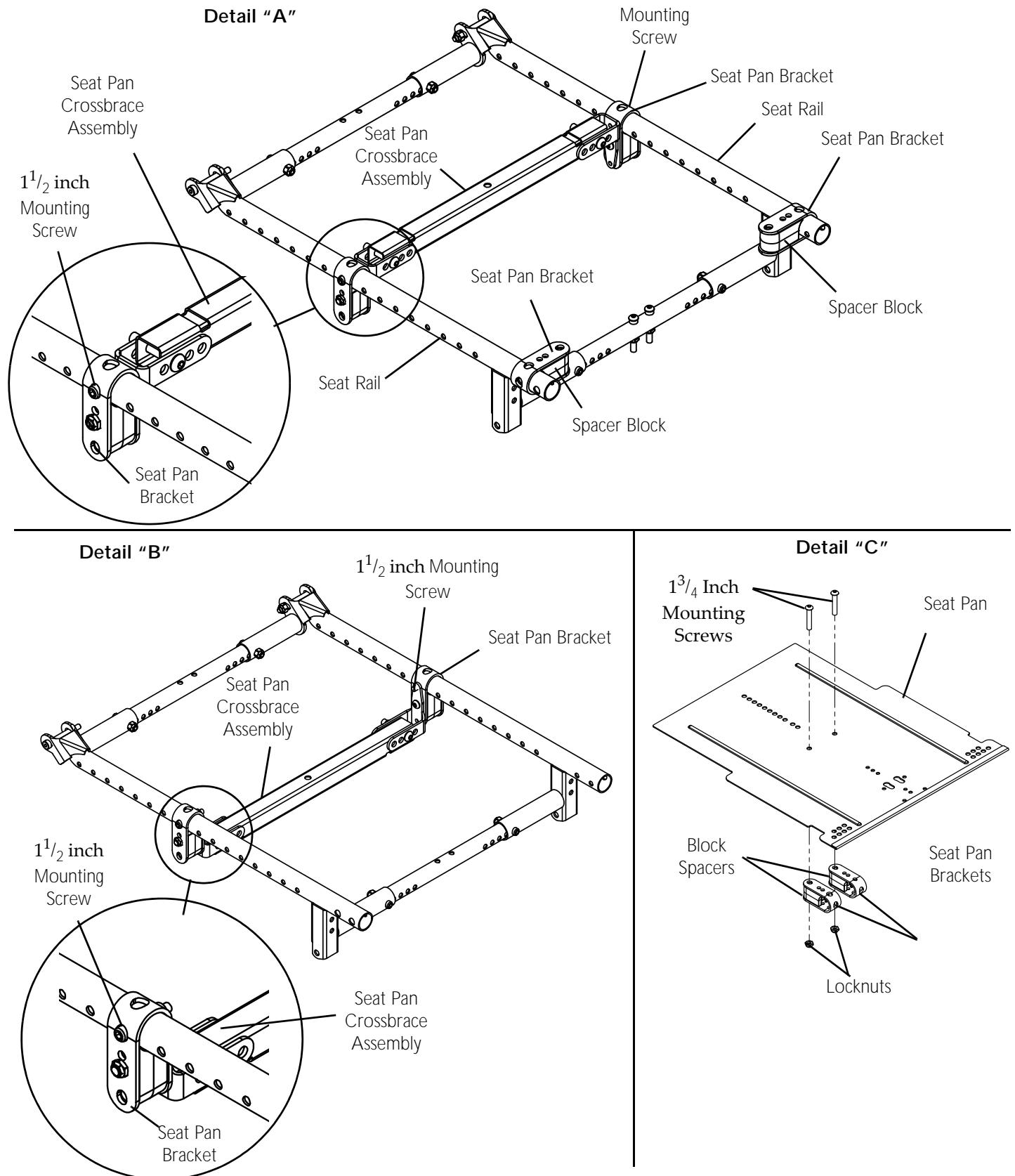
*NOTE: For this procedure, refer to FIGURE 9.2 on page 86.*

1. Remove the seat pan. Refer to [Remove the Seat Pan \(Wheelchairs Built After 4/5/2010\) - Flush Mount - Small and Medium Frames](#) on page 85.
2. Remove seat pan bracket and spacer block from the front of each seat rail (Detail "A").
3. Remove the 1<sup>1</sup>/<sub>2</sub> inch mounting screw in each seat pan bracket that secures the seat pan crossbrace assembly in place.

*NOTE: The seat pan crossbrace assembly has been designed to pivot around the middle mounting screw located in each seat pan bracket.*

4. Rotate the seat pan crossbrace assembly 180° as shown in Detail "B".
5. Align the keyholes in the seat pan with the two mounting screws on front crossbrace.
6. Slide seat pan backward
7. Install one 1<sup>1</sup>/<sub>2</sub> inch mounting screw through each seat pan bracket and into the seat pan crossbrace assembly to secure the seat pan crossbrace assembly in place. Tighten securely (Detail "B").
8. Secure the seat pan brackets and block spacers to the seat pan with two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts (Detail "C"). Tighten securely.

9. Install seat pan. Refer to Installing the Seat Pan (Wheelchairs Built After 4/5/2010) - Drop Mount - Small and Medium Frames on page 85.

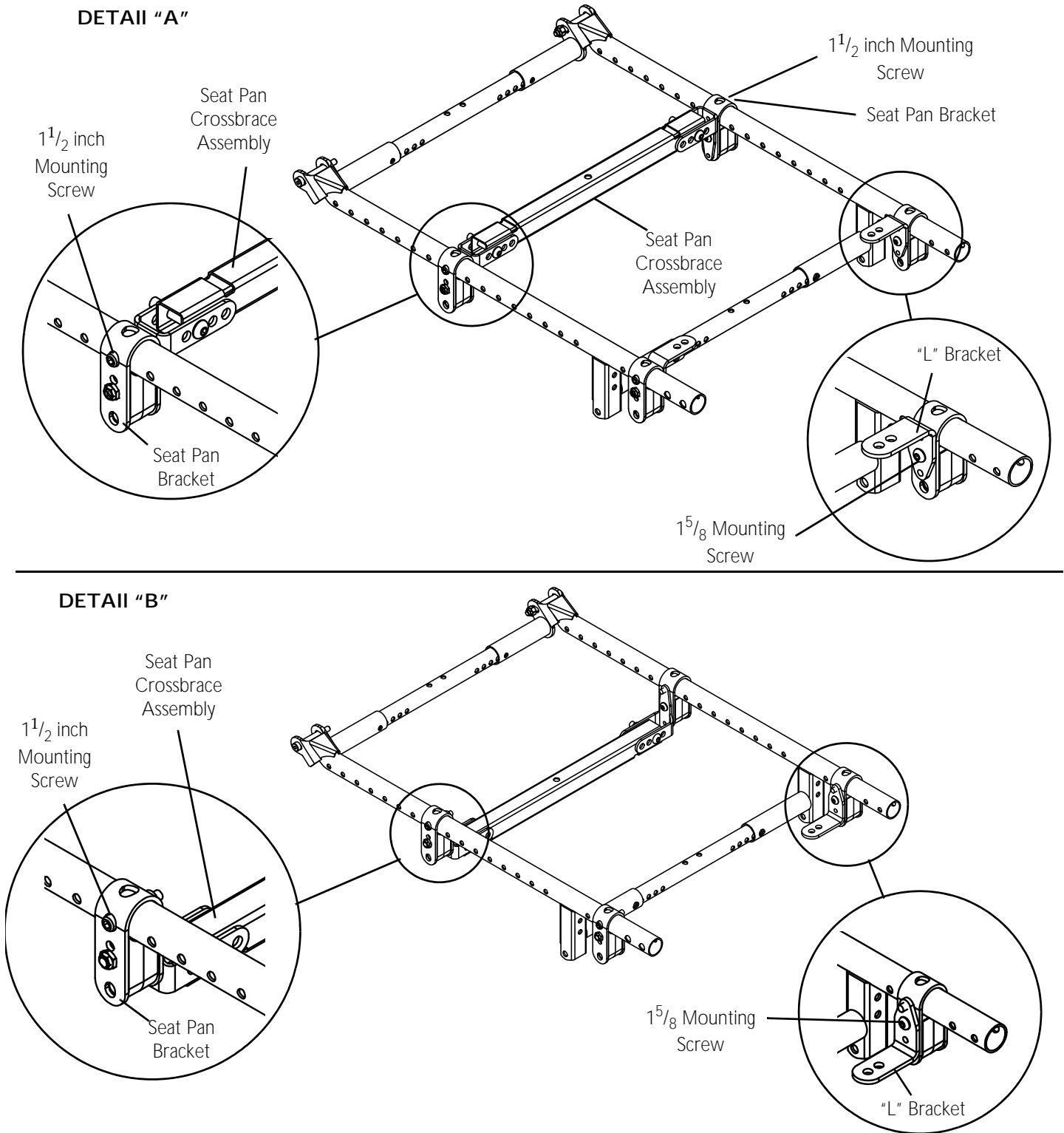


**FIGURE 9.2** Converting From Flush Mount to Drop Mount (Small Frames and Medium Frames)

### Converting From Flush Mount to Drop Mount (Large Frames)

*NOTE: For this procedure, refer to FIGURE 9.3 on page 88.*

1. Remove the seat pan. Refer to Remove the Seat Pan (Wheelchairs Built After 4/5/2010) on page 83.
2. Remove the  $1\frac{1}{2}$  inch mounting screw in each seat pan bracket that secures the seat pan crossbrace assembly in place.  
*NOTE: The seat pan crossbrace assembly has been designed to pivot around the middle mounting screw located in each seat pan bracket.*
3. Rotate the seat pan crossbrace assembly  $180^\circ$  as shown in (Detail "B").
4. Reinstall the  $1\frac{1}{2}$  inch mounting screws in each seat pan bracket to secure the seat pan crossbrace assembly in place (Detail "B"). Tighten securely.
5. Remove the  $1\frac{5}{8}$  inch mounting screw and locknut that secures the "L" bracket to the seat pan bracket (Detail "A").
6. Repeat STEP 5 for remaining "L" bracket.
7. Rotate the "L" bracket  $180^\circ$  and re-secure to the seat pan bracket with  $1\frac{5}{8}$  inch mounting screw and locknut (Detail "B"). Tighten securely.
8. Install seat pan. Refer to Installing the Seat Pan (Wheelchairs Built After 4/5/2010) - Drop Mount - Large Frames on page 85.



**FIGURE 9.3** Converting From Flush Mount to Drop Mount (Large Frames)



**Converting from Drop Mount to Flush Mount (Small and Medium Frames)**

*NOTE: For this procedure, refer to FIGURE 9.4 on page 90.*

1. Remove the seat pan. Refer to Remove the Seat Pan (Wheelchairs Built After 4/5/2010) - Drop Mount - Small and Medium Frames on page 83.

2. Remove the 1<sup>1</sup>/<sub>2</sub> inch mounting screw in each seat pan bracket that secures the seat pan crossbrace assembly in place (Detail "A").

*NOTE: The seat pan crossbrace assembly has been designed to pivot around the middle mounting screw located in each seat pan bracket.*

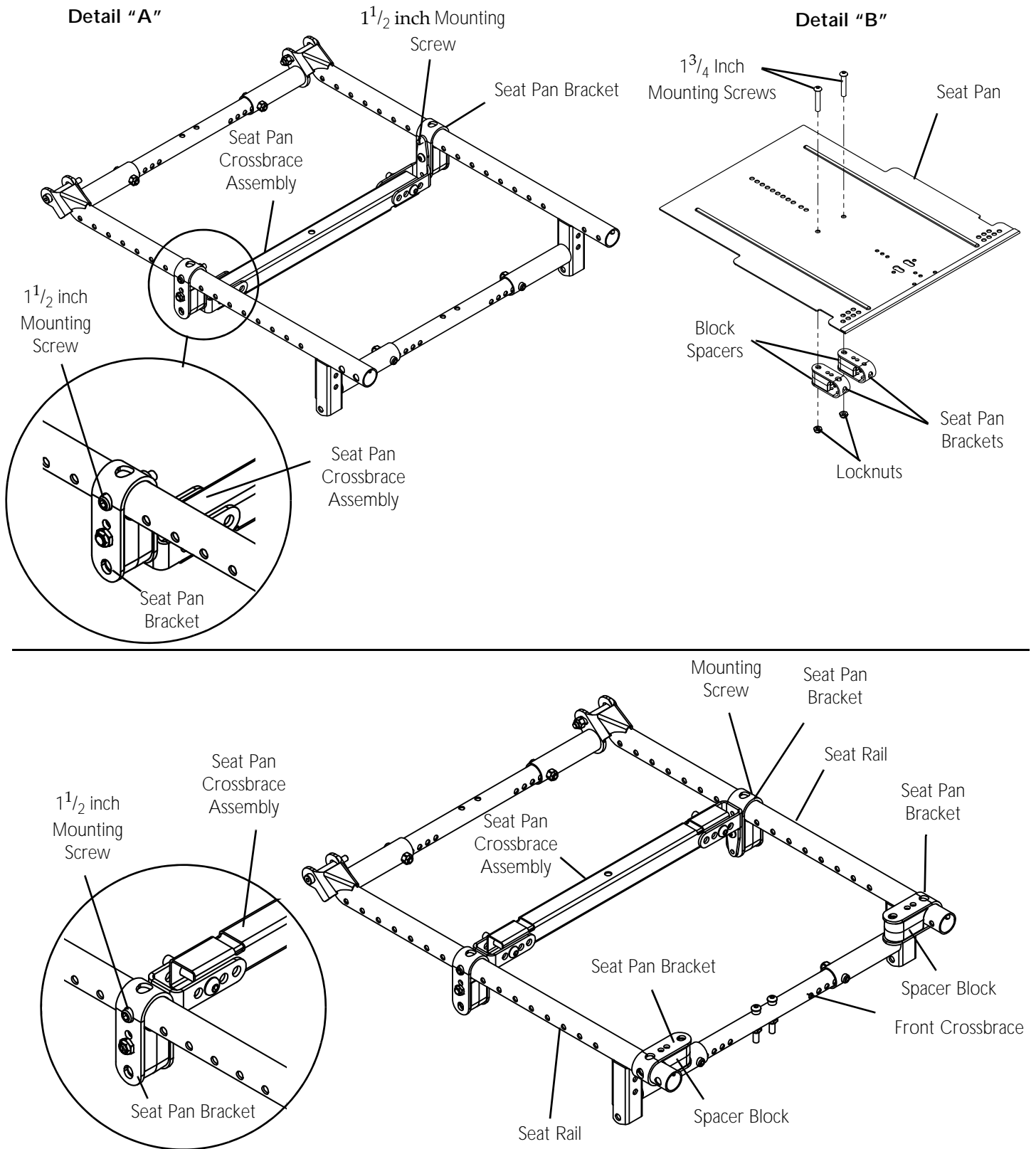
3. Rotate the seat pan crossbrace assembly 180° as shown in Detail "C".

4. Install one 1<sup>1</sup>/<sub>2</sub> inch mounting screw through each seat pan bracket and into the seat pan crossbrace assembly to secure the seat pan crossbrace assembly in place. Tighten securely (Detail "C").

5. Remove the two 1<sup>3</sup>/<sub>4</sub> inch mounting screws and locknuts that secure the seat pan brackets and block spacers to the seat pan (Detail "B").

6. Position one seat pan bracket and block spacer onto the front of each seat rail (Detail "C").

7. Install seat pan. Refer to Installing the Seat Pan (Wheelchairs Built After 4/5/2010) - Flush Mount - Small and Medium Frames on page 85.



**FIGURE 9.4** Converting from Drop Mount to Flush Mount (Small and Medium Frames)

## Converting from Drop Mount To Flush Mount (Large Frames)

NOTE: For this procedure, refer to FIGURE 9.5 on page 91.

1. Remove the seat pan. Refer to [Remove the Seat Pan \(Wheelchairs Built After 4/5/2010\) - Drop Mount - Large Frames](#) on page 83.

2. Remove the 1½ inch mounting screw in each seat pan bracket that secures the seat pan crossbrace assembly in place.

NOTE: The seat pan crossbrace assembly has been designed to pivot around the middle mounting screw located in each seat pan bracket.

3. Rotate the seat pan crossbrace assembly 180° as shown in (Detail "B").

4. Reinstall the 1½ inch mounting screws in each seat pan bracket to secure the seat pan crossbrace assembly in place. Tighten securely (Detail "B").

5. Remove the 1⅝ inch mounting screw and locknut that secures the "L" bracket to the seat pan bracket (Detail "A").

6. Repeat STEP 5 for remaining "L" bracket.

7. Rotate the "L" bracket 180° and re-secure to the seat pan bracket with 1⅝ inch mounting screw and locknut (Detail "B"). Tighten securely.

8. Install seat pan. Refer to [Installing the Seat Pan \(Wheelchairs Built After 4/5/2010\) - Drop Mount - Large Frames](#) on page 85.

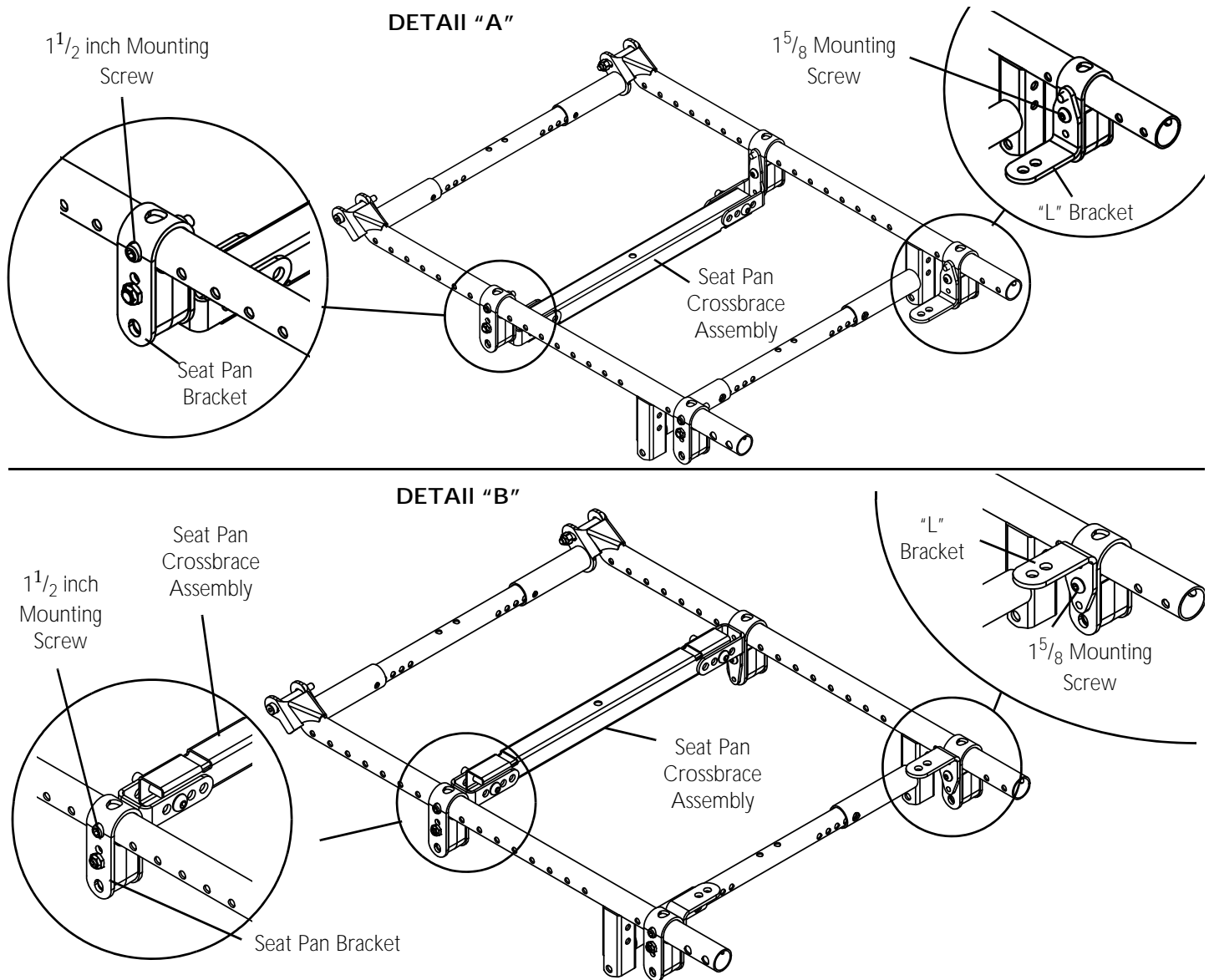


FIGURE 9.5 Converting from Drop Mount To Flush Mount (Large Frames)

## Adjusting the Seat Depth (Wheelchairs Built After 4/5/2010)

### Removing Backrest Brackets/Back Cane Assembly

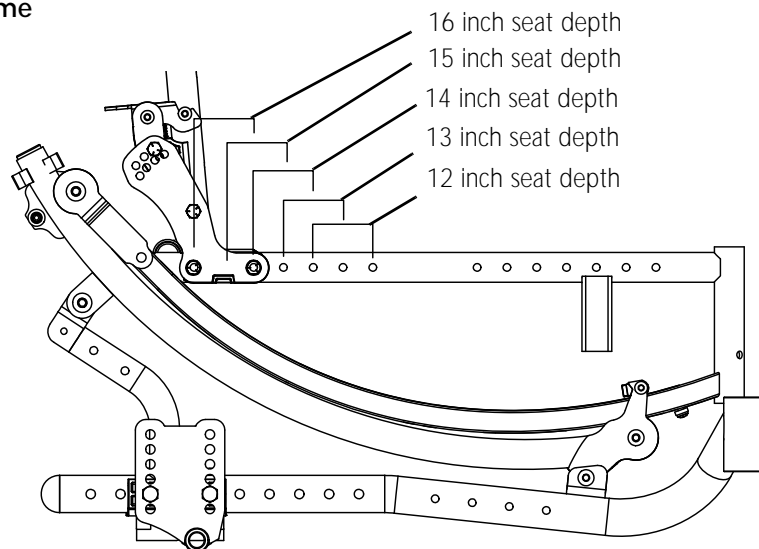
*NOTE: For this procedure, refer to FIGURE 9.6 on page 93. and FIGURE 9.7 on page 94*

1. Remove the arms. Refer to [Arms](#) on page 31 of the owner's manual, p/n 1154295.
2. Remove the back upholstery or seating system.

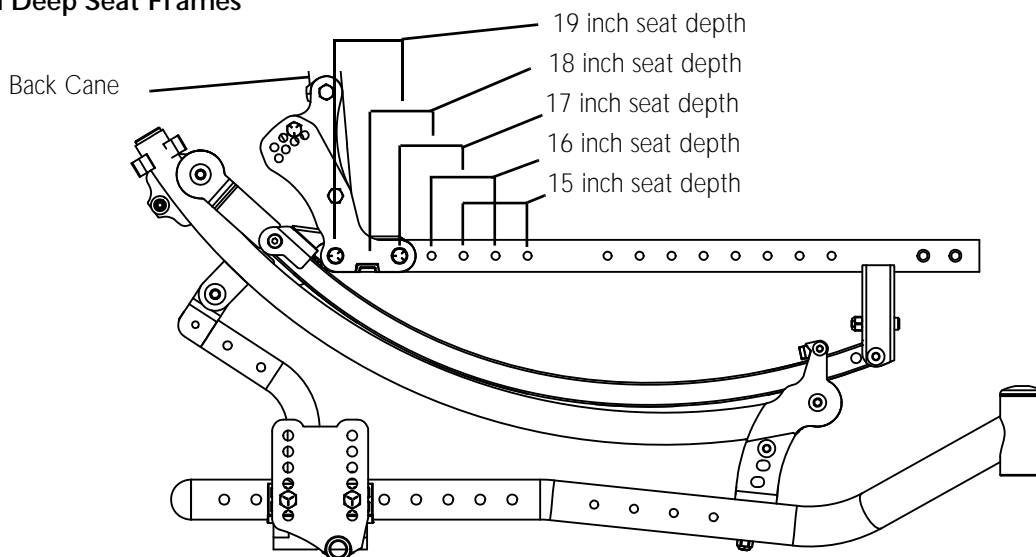
*NOTE: Before performing STEP 3, removing the seat pan, take note of the mounting orientation of the seat pan (i.e. flush mount or drop mount) for proper re-installation.*

3. Remove the seat pan. Refer to [Remove the Seat Pan \(Wheelchairs Built After 4/5/2010\)](#) on page 83.
4. Review FIGURE 9.6 on page 93 to determine which mounting holes in the seat rail are needed for the desired seat depth.

12 - 16 Inch Deep Seat Frame



15 - 19 Inch Deep Seat Frames



18 - 22 Inch Deep Seat Frame

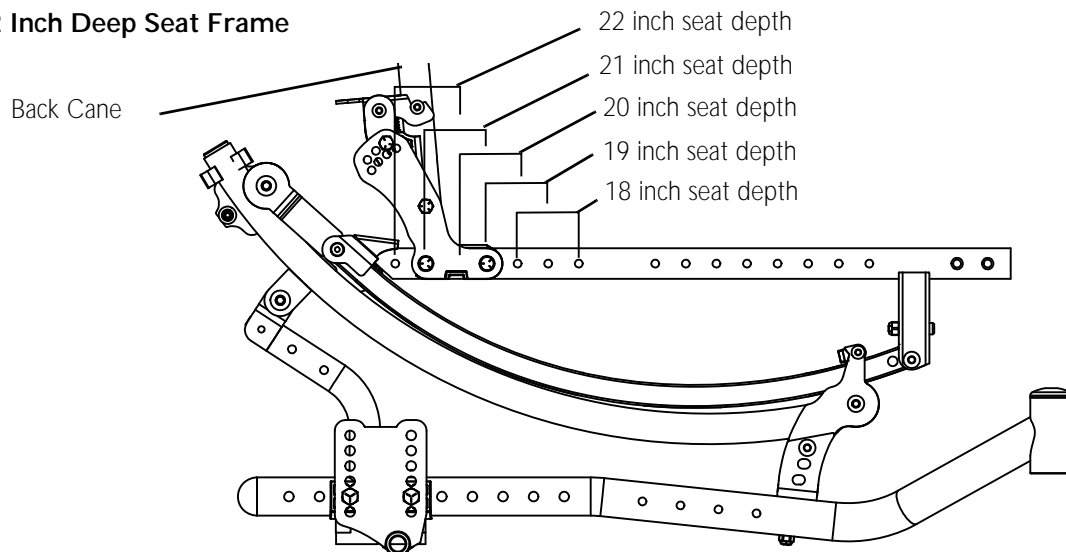
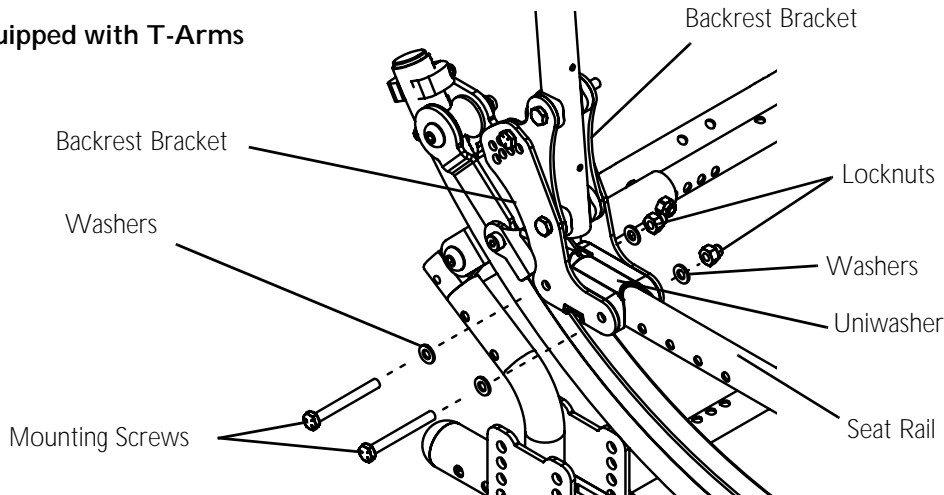


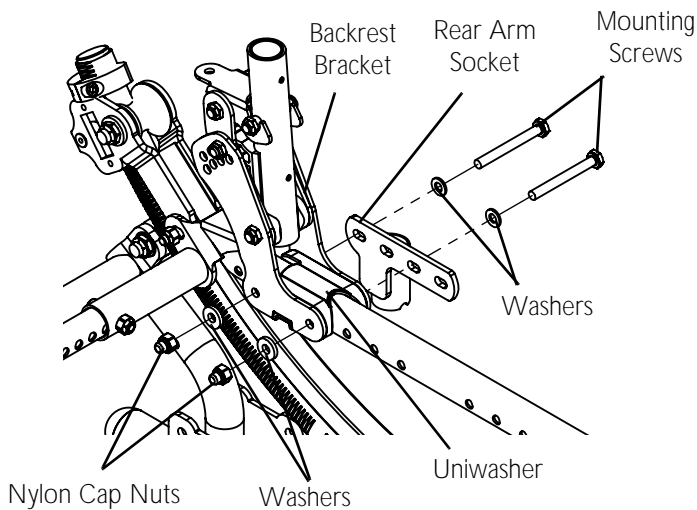
FIGURE 9.6 Installing the Seat Pan (Wheelchairs Built After 4/5/2010)

5. If the seat pan crossbrace assembly is mounted in the desired seat depth location, then the seat pan crossbrace assembly must be removed. Refer to Removing/Installing the Seat Pan Crossbrace Assembly on page 95.
6. Perform one of the following:
  - A. Solara equipped with T-arms - remove the two mounting screws, uniwasher, four washers, and two nylon cap nuts that secure the backrest bracket to the seat rail.
  - B. Solara equipped with non flip back arms - remove the two mounting screws, one uniwasher, four washers, and two nylon cap nuts that secure the rear arm socket and backrest bracket to the seat rail.
  - C. Solara equipped with flip back arms - remove the two mounting screws, uniwasher, four washers, and two nylon cap nuts that secure the backrest bracket and flip back arm bracket to the seat rail.
7. Repeat STEP 4 for remaining backrest bracket.

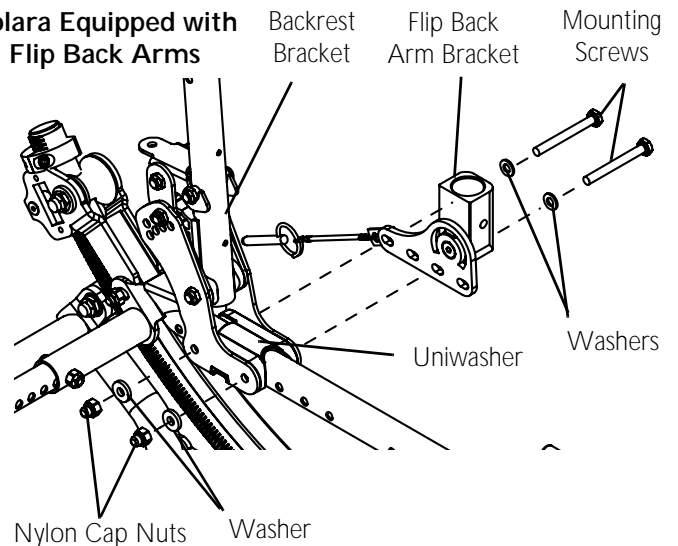
**Solara Equipped with T-Arms**



**Solara Equipped with Non Flip Back Arms**



**Solara Equipped with Flip Back Arms**



**FIGURE 9.7** Removing/Installing Backrest Brackets/Back Cane Assembly

## Installing Backrest Bracket/Back Cane Assembly

*NOTE: For this procedure, refer to FIGURE 9.7 on page 94.*

1. Align uniwashers and backrest brackets with the corresponding mounting holes determined in Removing Backrest Brackets/Back Cane Assembly on page 92.
2. Perform one of the following:
  - A. Solara equipped with T -arms - Secure the backrest bracket to the seat rail with the two mounting screws, uniwasher, four washers, and two nylon cap nuts. Tighten securely (FIGURE 9.7).
  - B. Solara equipped with non flip back arms - Secure the rear arm socket and backrest bracket to the seat rail with two mounting screws, one uniwasher, four washers, and two nylon cap nuts. Tighten securely (FIGURE 9.7).
  - C. Solara equipped with flip back arms - Secure the backrest bracket and flip back arm bracket to the seat rail with two mounting screws, uniwasher, four washers, and two nylon cap nuts. Tighten securely (FIGURE 9.7).
3. If necessary, reinstall the seat pan crossbrace assembly. Refer to Removing/Installing the Seat Pan Crossbrace Assembly on page 95.
4. Install the seat pan in the orientation noted from the removal procedure. Refer to Installing the Seat Pan (Wheelchairs Built After 4/5/2010) on page 85.
5. Install the arms. Refer to Arms on page 31 of the owner's manual, p/n 1154295.
6. Install the back upholstery or seating system.

## Removing/Installing the Seat Pan Crossbrace Assembly

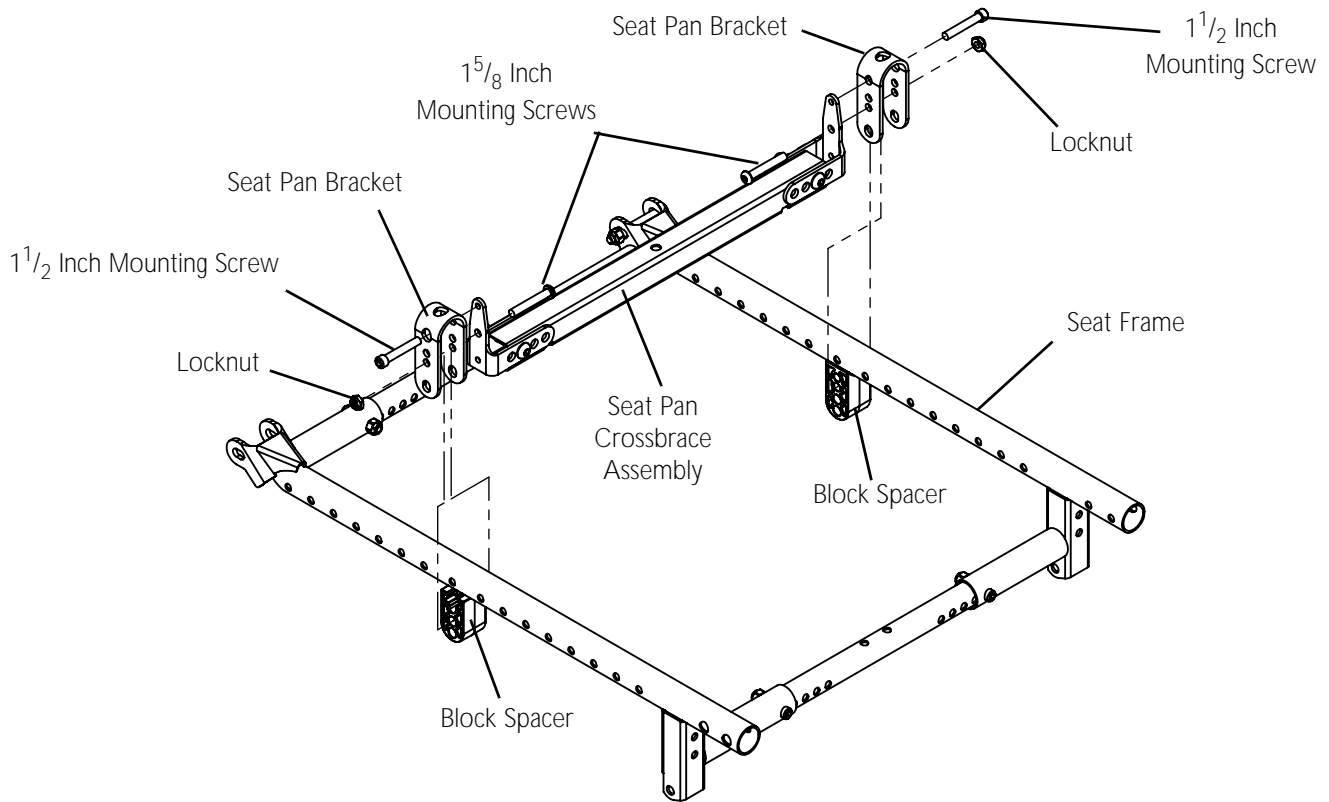
*NOTE: For this procedure, refer to FIGURE 9.8 on page 96.*

### Removing

1. Remove the  $1\frac{1}{2}$  inch mounting screw from each seat pan bracket that secures the seat pan crossbrace assembly in place.
2. Remove the two  $1\frac{5}{8}$  inch mounting screws and locknuts that secure the seat pan crossbrace assembly, block spacers, and seat pan brackets together.
3. Remove the seat pan crossbrace assembly, block spacers, and seat pan brackets from the seat frame.

### Installing

1. Secure the seat pan crossbrace assembly, block spacers, and seat pan brackets on the seat frame with two  $1\frac{5}{8}$  inch mounting screws and locknuts. Tighten securely.
2. Secure the seat pan crossbrace assembly in place with  $1\frac{1}{2}$  inch mounting screw through each seat pan bracket. Tighten securely.



**FIGURE 9.8** Removing/Installing the Seat Pan Crossbrace Assembly



## SECTION 10—TILT

**⚠ WARNING**

After ANY adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

**Removing/Installing the Trigger Release Lever with Cable**

NOTE: For this procedure, refer to FIGURE 10.1.

**Removing**

1. Remove the mounting screw that secures the trigger release housing to the back cane.
2. Cut the tie wraps that secure the two cables together.
3. Remove the two mounting screws that secure the gear sector to the gear rack.

**Installing**

1. Secure the trigger release housing to the back cane with mounting screw. Tighten securely.
2. Secure the gear sector to the gear rack with two mounting screws. Tighten securely.
3. Secure the two cables together with three tie wraps in the locations shown.

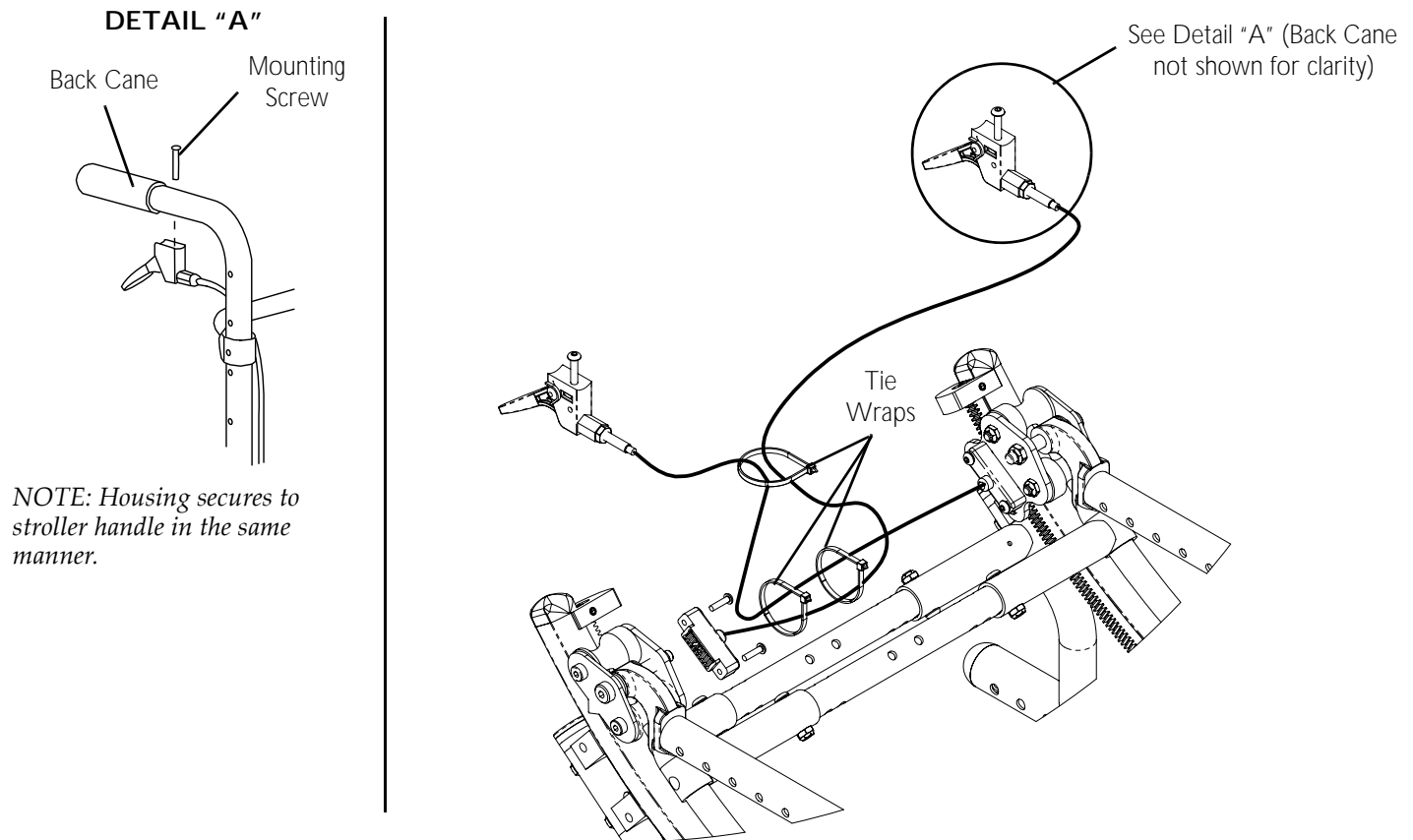


FIGURE 10.1

## SECTION 11—VENT TRAY

NOTE: The compact vent tray can accommodate the following ventilators:

MANUFACTURER	MODEL	WIDTH	DEPTH	HEIGHT	WEIGHT
Drager	Carina Home	6.9"	15.2"	10.8"	10.8 lbs.
Newport Medical	HT-50	10.63"	7.87"	10.24"	15 lbs.
Breas	Vivo 40	7.28"	8.94"	9.45"	1.8 lbs.
Breas	PV 403 PEEP	13.78"	10.24"	6.89"	2.5 lbs.
Puritan-Bennett	Achieva	13.30"	15.60"	10.75"	32.0 lbs.
Puritan-Bennett	540	9.25"	12.40"	6.00"	9.9 lbs.
Viasys	LTV Series	10.5"	13.5"	3.25"	14.5 lbs.
Impact	754	8.87"	4.5"	11.5"	13 lbs.

NOTE: The standard vent tray can accommodate ventilators that will fit these dimensions 13" Wide X 12" Deep x 10 1/8" High.

## Vent Tray

NOTE: For wheelchairs equipped with tilt release handles, refer to [Installing Vent Tray Attaching Components](#) on page 98. For wheelchairs equipped with foot tilt release pedal, refer to [Installing Vent Tray onto Wheelchairs equipped with Foot Tilt Release Pedal](#) on page 100.

Kit No. 1164327 contains the following:

DESCRIPTION	QTY
Vent Tray Support Tube	2
Plug Button	2
1 3/4 Inch Mounting Screw	4
3/4 Inch Washer	8
5/16 - 18 Locknut	6
5/8 Inch Mounting Screw	4
1/2 Inch Mounting Screw	2

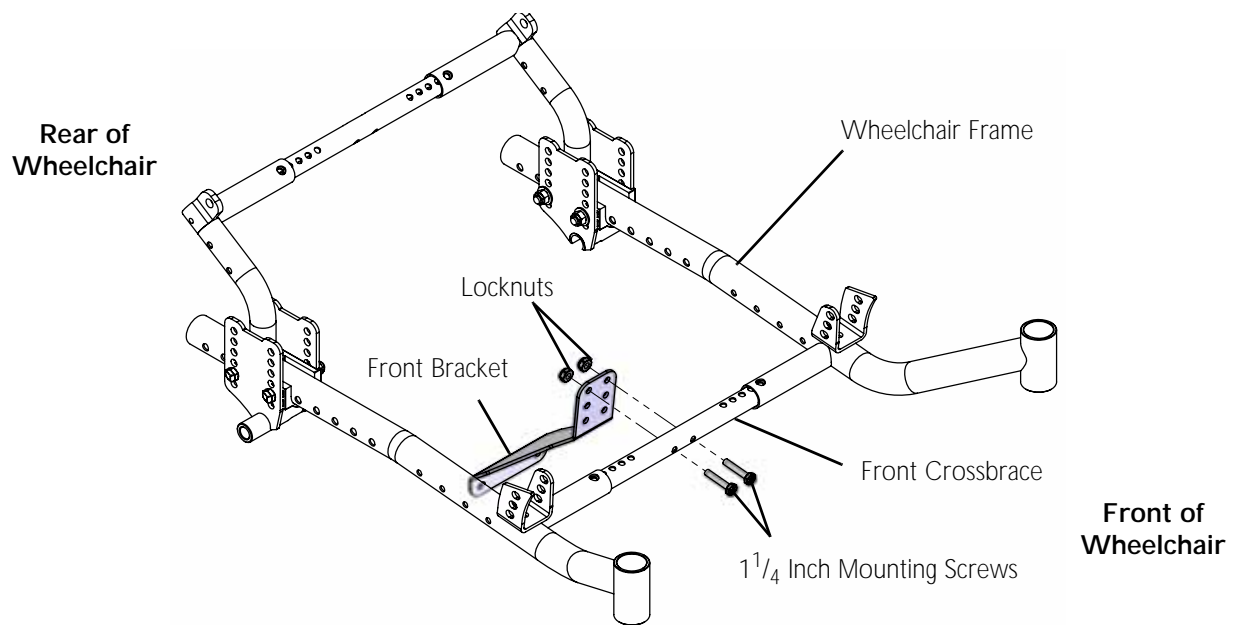
DESCRIPTION	QTY
1/4 - 28 Locknut	6
1 1/4 Inch Mounting Screw	2
Strap and Slide Assembly	6
Slide Release Buckle	6
Front Bracket	1
Vent Tray Bracket	2
Vent and Battery Tray	1

## Installing Vent Tray Attaching Components

### Installing Front Bracket

NOTE: For this procedure, refer to FIGURE 11.2.

1. If equipped with anti tippers, remove the anti-tippers from the wheelchair.
2. Secure the front bracket to the front crossbrace as shown with two 1 1/4 inch mounting screws and locknuts. Tighten securely.

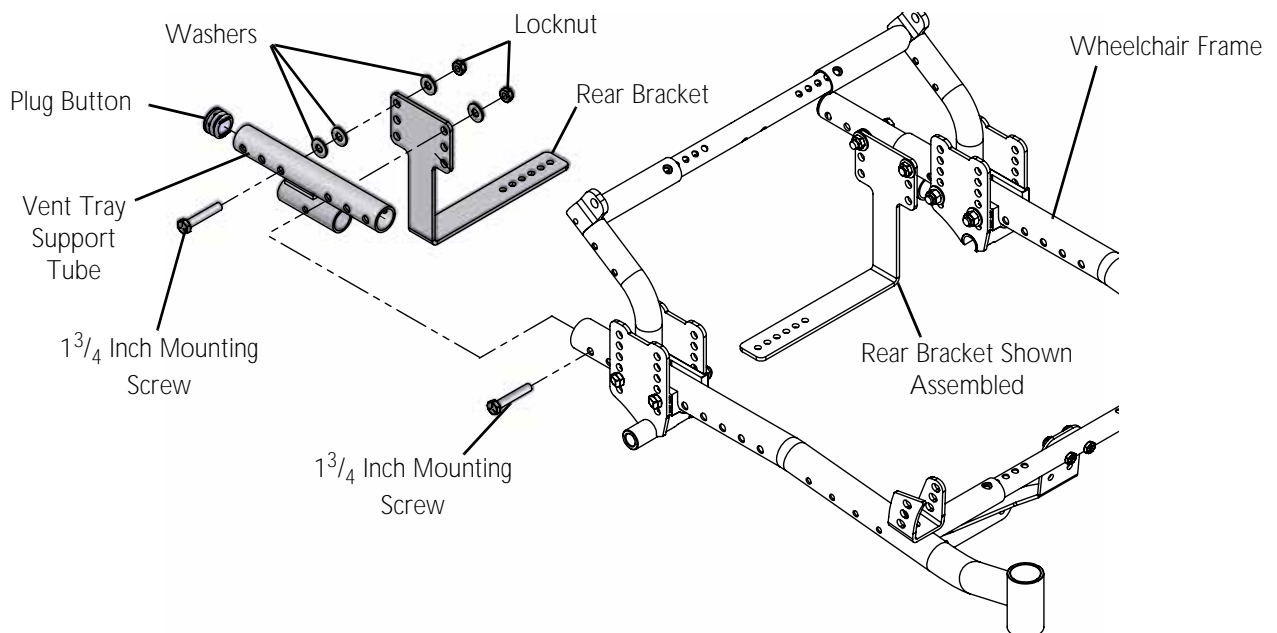


**FIGURE 11.2** Installing Front Bracket

### Installing Rear Brackets

*NOTE: For this procedure, refer to FIGURE 11.3 on page 99.*

1. Secure the rear bracket and vent tray support tube to the wheelchair frame with  $1\frac{3}{4}$  inch mounting screw, washer and locknut. Tighten securely.
2. Secure the rear bracket to the vent tray support tube with  $1\frac{3}{4}$  inch mounting screw, three washers and locknut. Tighten securely.
3. Insert plug button into the end of the vent tray support tube.
4. Repeat STEPS 1-3 for remaining rear bracket.



**FIGURE 11.3** Installing Rear Brackets

## Installing Vent Tray

NOTE: For this procedure, refer to FIGURE 11.4.

1. With the vent tray positioned on the rear brackets, secure the vent tray to the front bracket with two  $\frac{1}{2}$  inch mounting screws and locknuts. Tighten securely.
2. Secure the vent tray to the rear brackets with four  $\frac{5}{8}$  inch mounting screws and locknuts. Tighten securely.

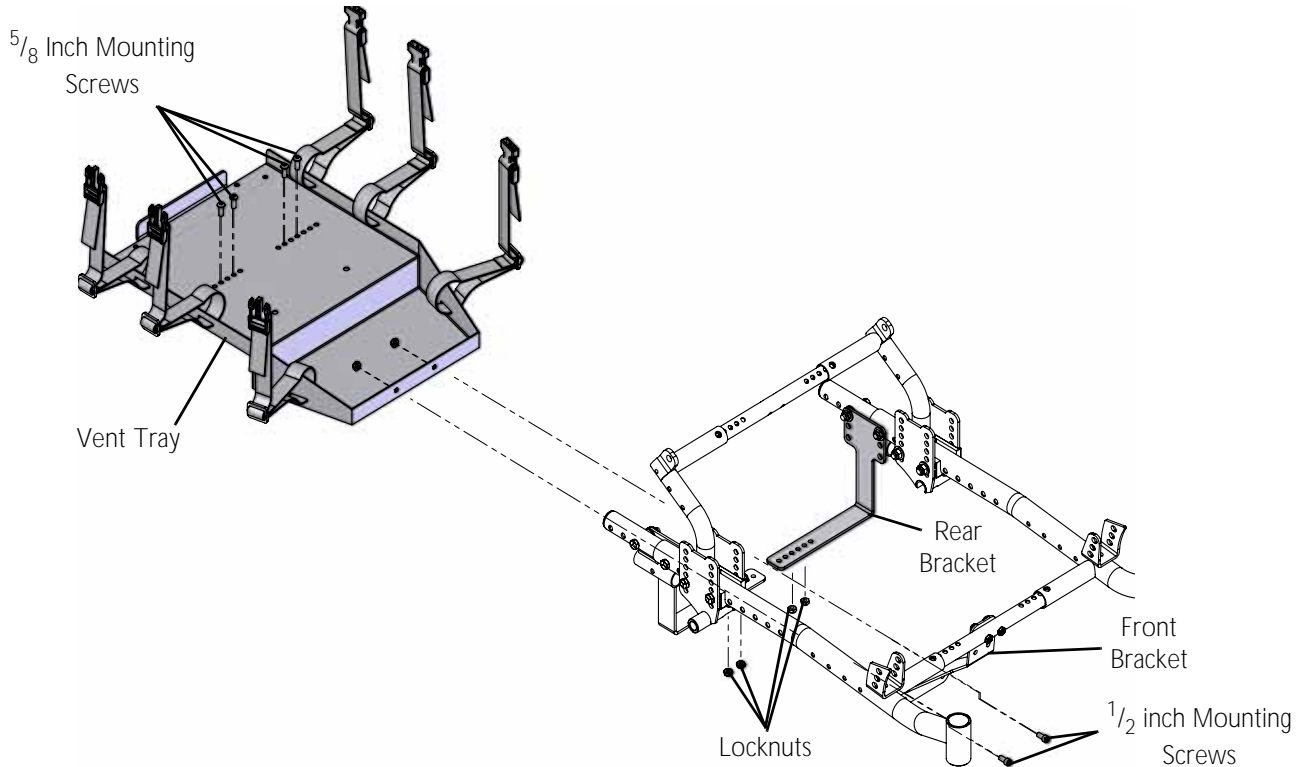


FIGURE 11.4 Installing Vent Tray

## Installing Vent Tray onto Wheelchairs equipped with Foot Tilt Release Pedal

NOTE: Additional Kit #1163914 is required to install vent tray on wheelchairs equipped with Foot Tilt Release Pedal.

NOTE: Additional Kit #1163917 is required to install foot tilt lock out on Solara 3G wheelchairs equipped with vent tray.

Kit #1163914 and 1163917 contain the following:

DESCRIPTION	QTY #1163914	QTY #1163917
Vent Foot Tilt Connecting Link	1	N/A
Nylon Washer	3	N/A
$\frac{1}{4}$ - 28 Locknut	2	N/A
Nylon Spacer	2	N/A
1 Inch Mounting Screw	2	N/A
2 $\frac{1}{4}$ Inch Mounting Screw	1	N/A
$\frac{7}{8}$ inch Nylon Washer	2	1
Foot Tilt Release Pedal	1	N/A

DESCRIPTION	QTY #1163914	QTY #1163917
Coved Spacer	2	1
$\frac{11}{16}$ inch Washer	1	2
$\frac{5}{16}$ - 24 Locknut	1 (Nylon)	N/A
Nylon Washer	1	N/A
Tilt Lockout Release Pedal	N/A	1
2 Inch Mounting Screw	N/A	1
$\frac{5}{16}$ - 18 Locknut	N/A	1

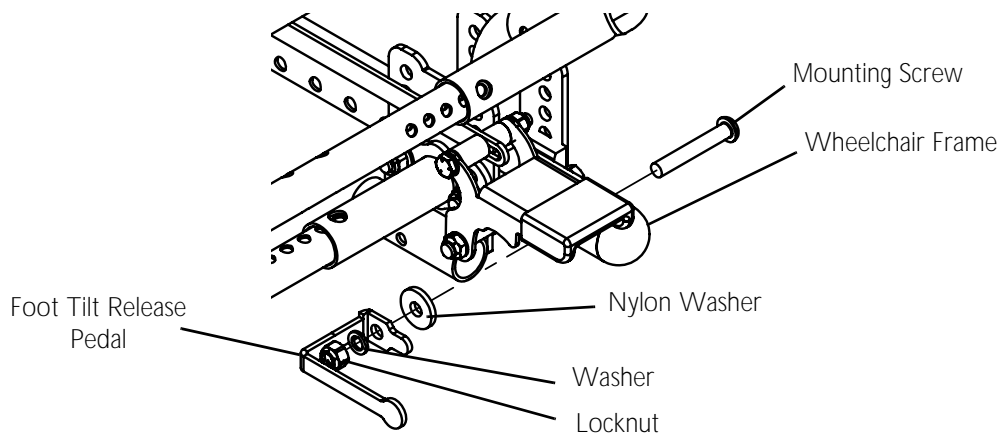
To install kit nos.1164327, 1163914 and 1163917, perform the following procedures in order:

- A. Remove Foot Tilt Lock Out (if applicable.)
- B. Remove Existing Foot Tilt Release Pedal and Existing Connecting Link
- C. Installing Vent Tray Attaching Components
- D. Install Foot Tilt Release Pedal and New Connecting Link
- E. Install Foot Tilt Lock Out (if applicable).

## Remove Foot Tilt Lock Out

*NOTE: For this procedure, refer to FIGURE 11.5.*

1. Remove the mounting screw, nylon washer, washer and locknut that secures the foot tilt lockout release pedal to the wheelchair frame.

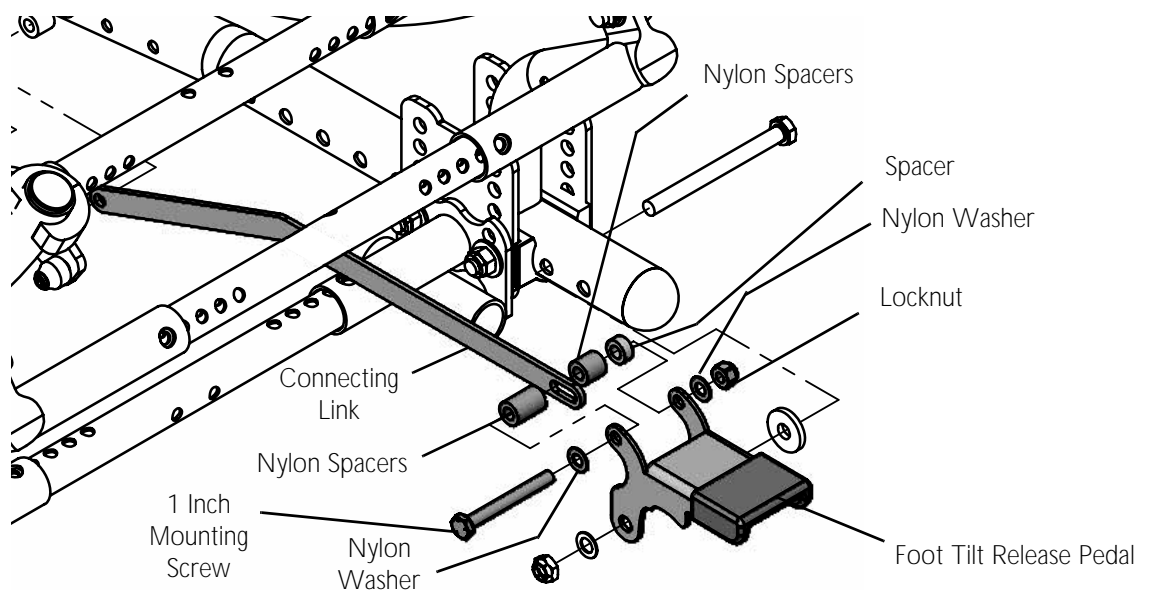


**FIGURE 11.5** Remove Foot Tilt Lock Out

## Remove Existing Foot Tilt Release Pedal and Existing Connecting Link

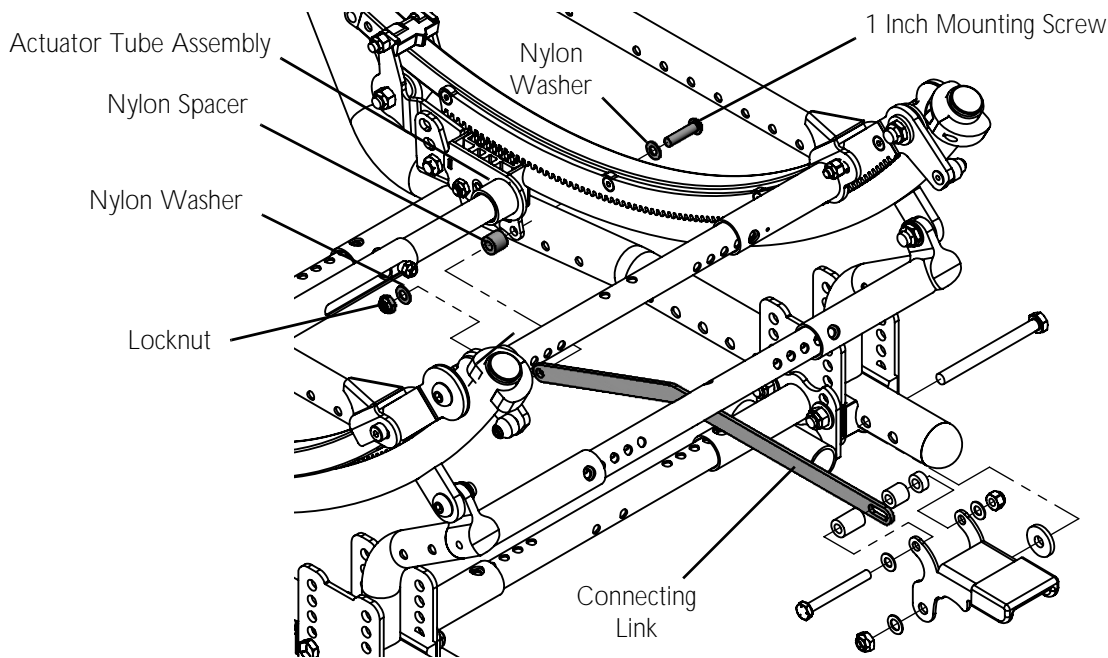
*NOTE: For this procedure, refer to FIGURE 11.6, FIGURE 11.7, and FIGURE 11.8 on page 102.*

1. Remove the 1 inch mounting screw, two nylon spacers, spacer, and locknut that secures the connecting link to the foot tilt release pedal (FIGURE 11.6).



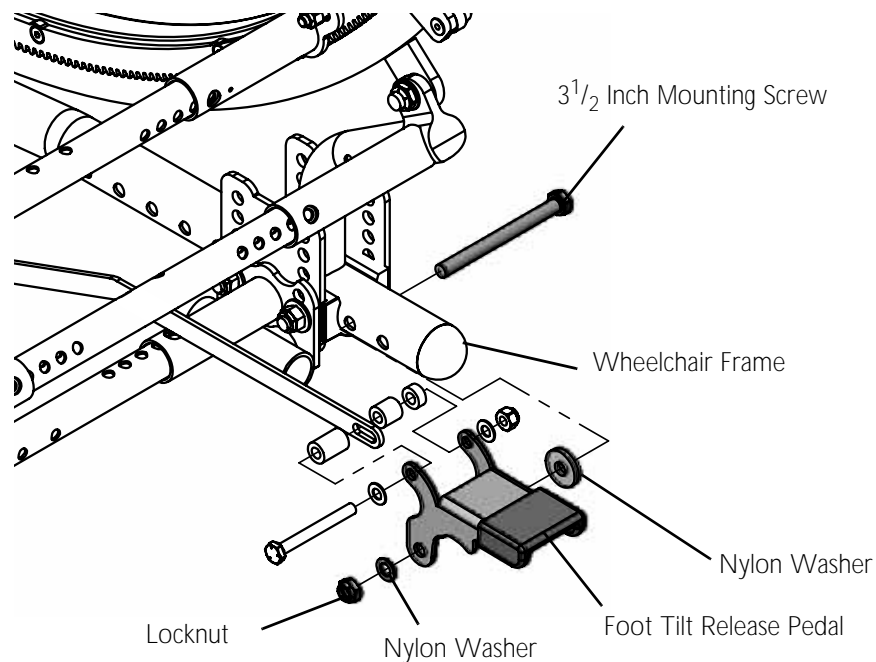
**FIGURE 11.6** Removing the Connecting Link

- Remove the 1 inch mounting screw, two nylon washers, nylon spacer, and locknut that secure the connecting link to actuator tube assembly (FIGURE 11.7).



**FIGURE 11.7** Removing the Existing Connecting Link

- Remove the 3 1/2 inch mounting screw, two nylon washers, and locknut that secures the foot tilt release pedal to the wheelchair frame (FIGURE 11.8).



**FIGURE 11.8** Remove Existing Foot Tilt Release Pedal and Existing Connecting Link

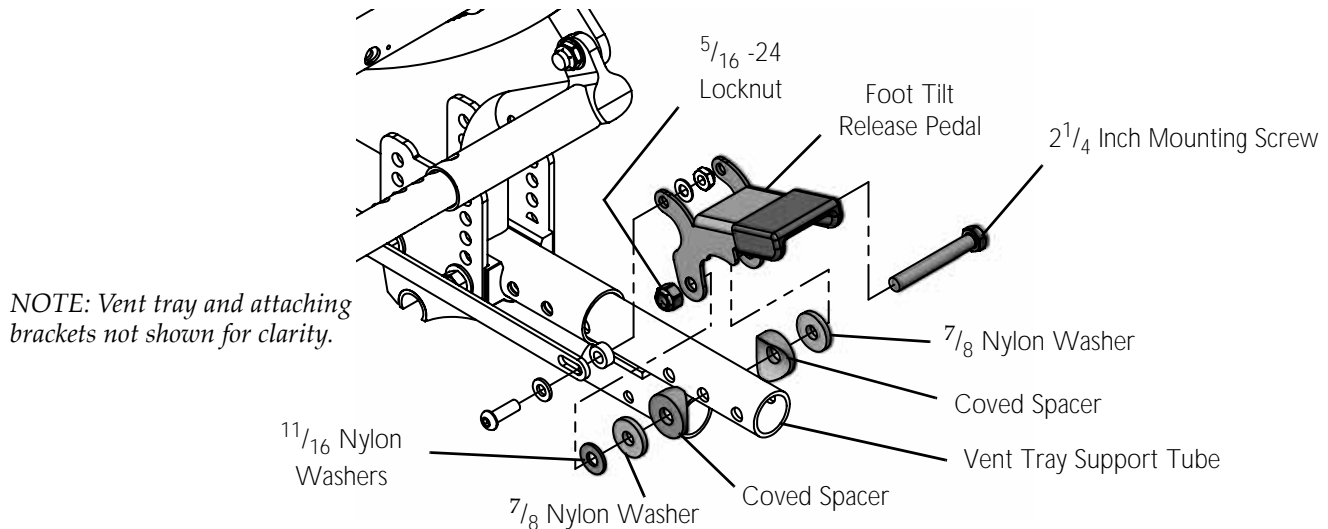
## Install the Vent Tray

1. Install the Vent Tray. Refer to [Installing Vent Tray Attaching Components](#) on page 98.

## Install Foot Tilt Release Pedal and New Connecting Link

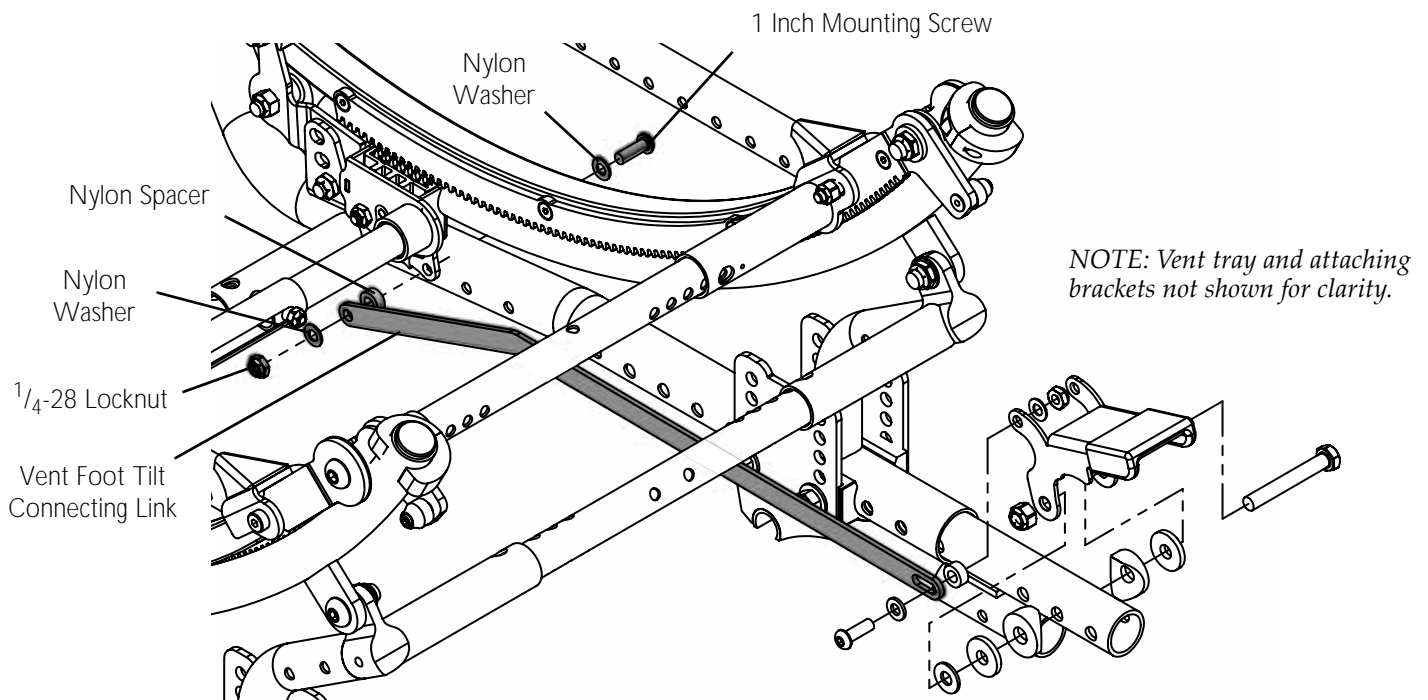
*NOTE: For this procedure, refer to FIGURE 11.9, FIGURE 11.10 on page 103, and FIGURE 11.11 on page 104.*

1. Position the new foot tilt release pedal over the vent tray support tube (FIGURE 11.9).
2. Secure the foot tilt release pedal to the vent tray support tube with 2 <sup>1</sup>/<sub>4</sub> inch mounting screw, two <sup>7</sup>/<sub>8</sub> nylon washers, two coved spacers, <sup>11</sup>/<sub>16</sub> washer, and <sup>5</sup>/<sub>16</sub>-24 locknut. Tighten securely (FIGURE 11.9).



**FIGURE 11.9** Installing the Foot Tilt Release Pedal

3. Secure the vent foot tilt connecting link to actuator tube assembly with 1 inch mounting screw, two nylon washers, nylon spacer, and <sup>1</sup>/<sub>4</sub> - 28 locknut (FIGURE 11.10).



**FIGURE 11.10** Installing the Vent Foot Tilt Connecting Link

- Secure the vent foot tilt connecting link to the foot tilt release pedal with 1 inch mounting screw, two nylon washers, nylon spacer and locknut. Tighten securely (FIGURE 11.11).

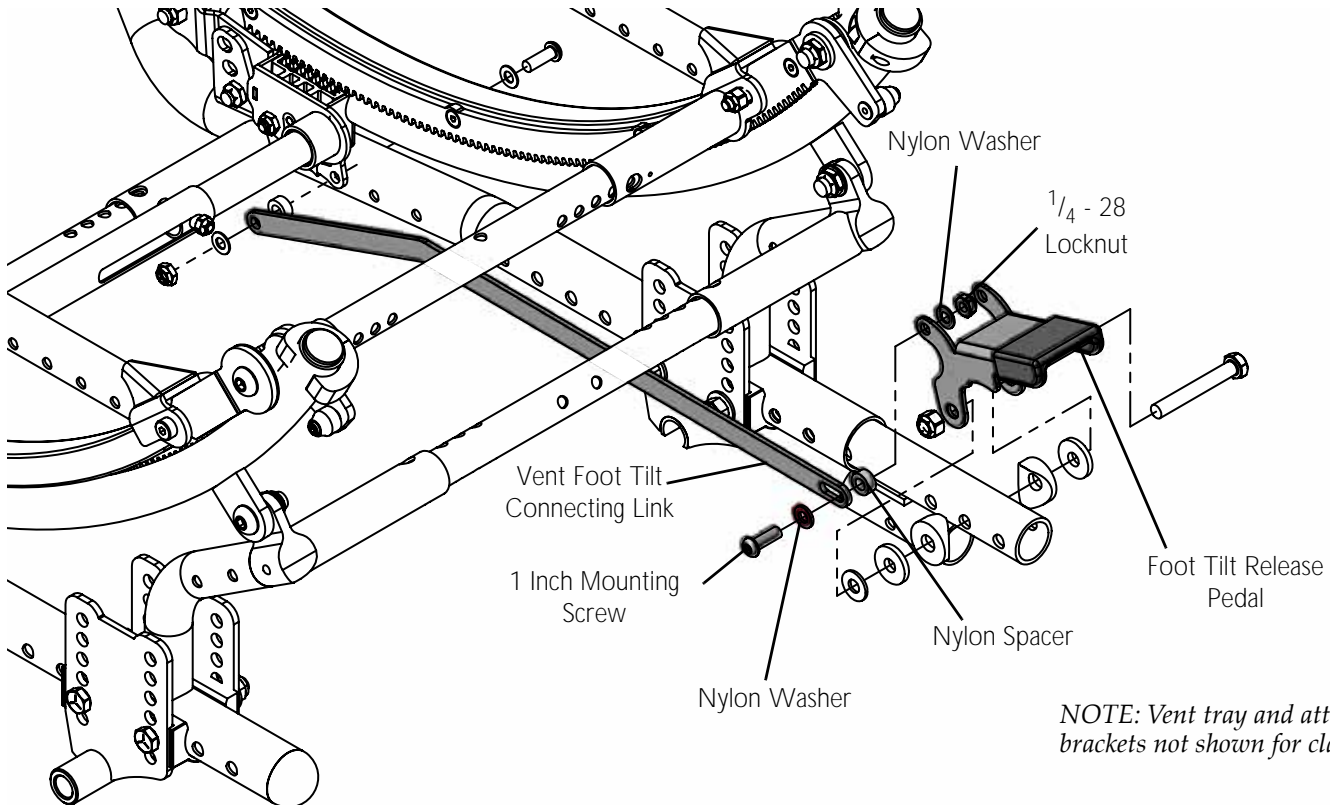


FIGURE 11.11 Installing the New Longer Connecting Link

## Install Foot Tilt Lock Out

NOTE: For this procedure, refer to FIGURE 11.12 on page 104.

- Secure the new foot tilt lockout release pedal to the wheelchair frame with the 2 inch mounting screw,  $\frac{7}{8}$  nylon washer, coved spacer,  $\frac{11}{16}$  washer and locknut that.

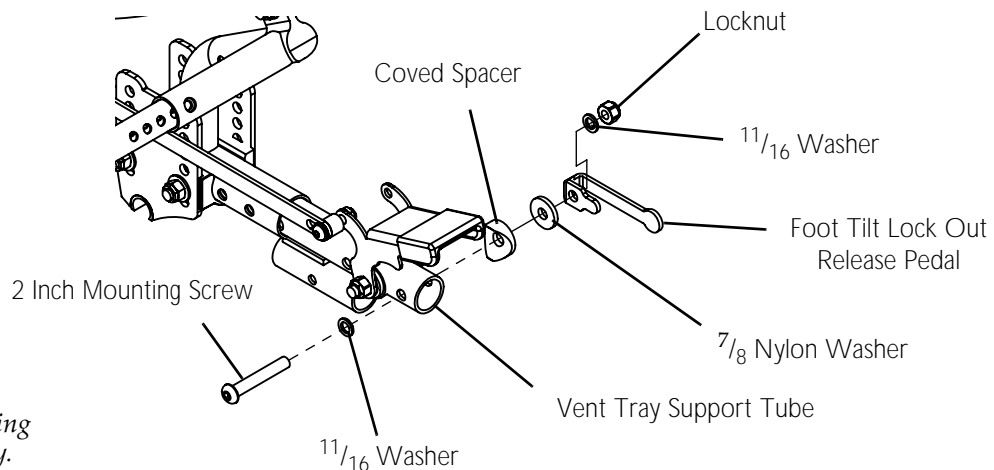


FIGURE 11.12 Remove Foot Tilt Lock Out



## Compact Vent Tray

Kit includes the following:

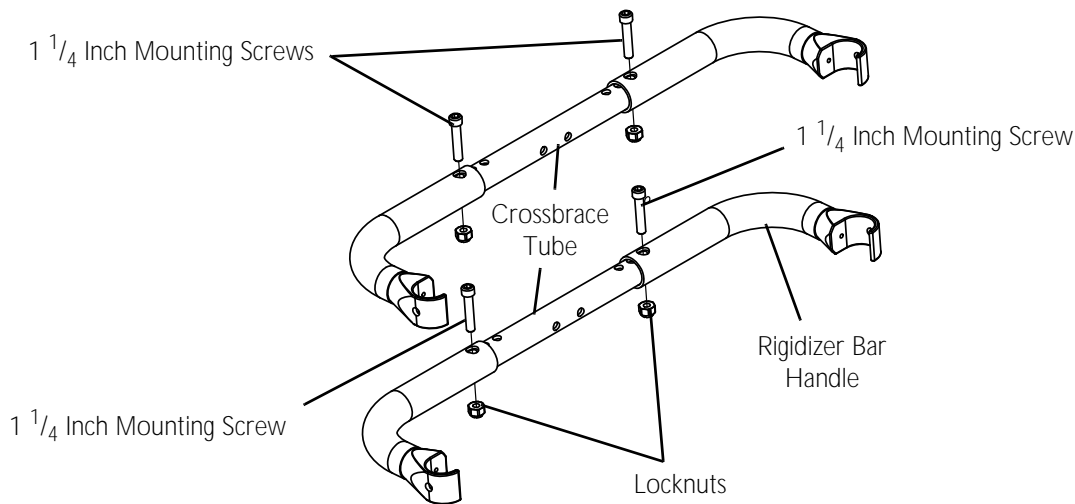
DESCRIPTION	QTY
Compact Vent Assembly	1
$\frac{5}{8}$ Inch Mounting Screw	2
$2\frac{1}{4}$ Mounting Screw	2
$\frac{5}{8}$ Spacer	2
Steel Washer	2
Locknuts	14

DESCRIPTION	QTY
Coved spacer	8
$1\frac{1}{4}$ Mounting Screw	4
$1\frac{1}{2}$ Mounting Screw	6
Mounting Bracket	1
Rigidizer Bar Handles	4
Crossbrace Tube	2

### Assemble Spreader Bars

*NOTE: For this procedure, refer to FIGURE 11.13.*

1. Place one rigidizer bar handle on each end of a crossbrace tube.
2. Measure the width of the back canes.
3. Adjust the position of the rigidizer bar handles in/out to match width of back canes.
4. Secure the rigidizer bar handles to the crossbrace tube at the width determined in STEP 2 with two  $1\frac{1}{4}$  inch mounting screws and locknuts. Tighten securely.
5. Repeat STEPS 3-4 for remaining spreader bar.



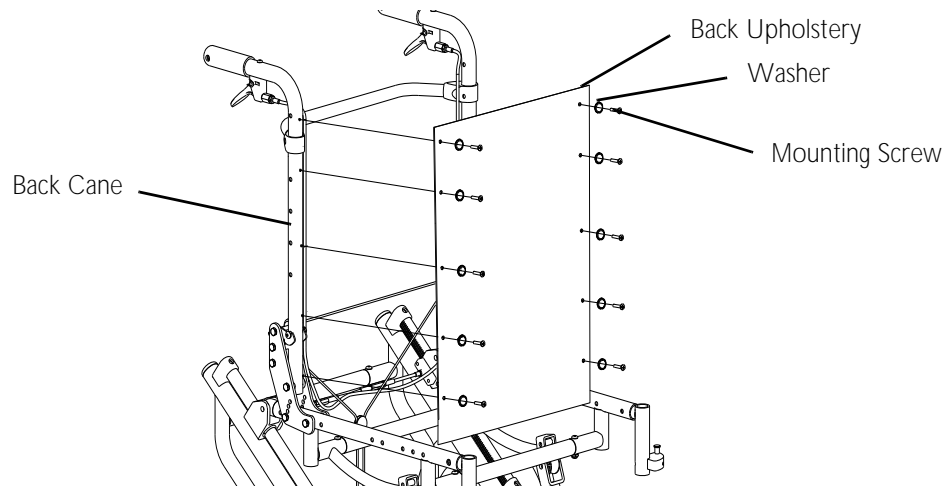
**FIGURE 11.13** Assemble Spreader Bars

## Remove the Back Upholstery or Seating System

### Back Upholstery

*NOTE: For this procedure, refer to FIGURE 11.14.*

1. Remove the mounting screws and washers that secure the back upholstery to the back canes.
2. Remove the back upholstery from the back canes.



**FIGURE 11.14** Remove the Back Upholstery or Seating System

### Seating System

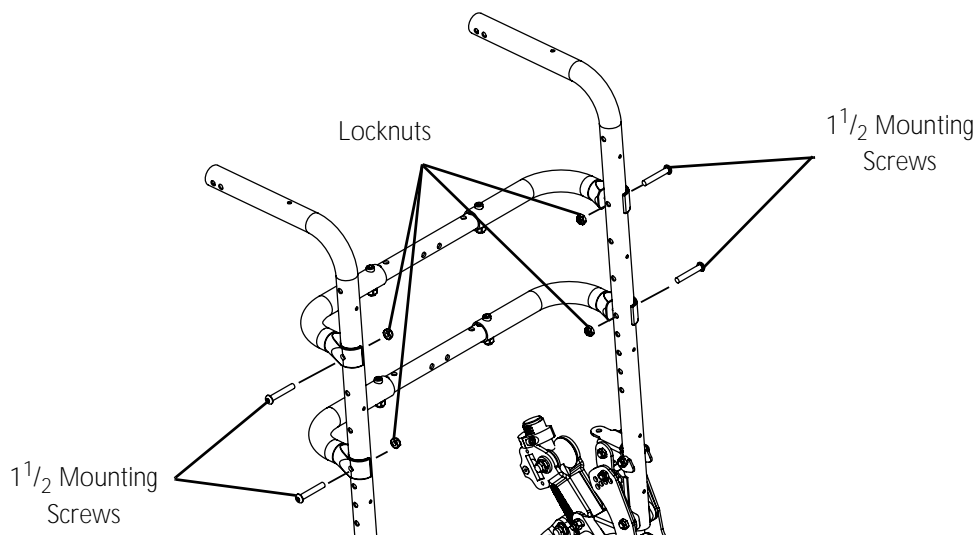
*NOTE: If wheelchair is equipped with seating system, remove the seating system. Refer to the seating system owner's manual.*

### Install Spreader Bars

*NOTE: For this procedure, refer to FIGURE 11.15.*

*NOTE: If wheelchair already has a spreader bar, only one of the new spreader bars in the kit will be needed.*

1. Secure spreader bars to back canes in the desired location with four 1<sup>1</sup>/<sub>2</sub> inch mounting screws and locknuts. Tighten securely.



**FIGURE 11.15** Install Spreader Bars

## Install Mounting Bracket

NOTE: For this procedure, refer to FIGURE 11.16.

1. Secure mounting bracket to lower spreader bar with two  $1\frac{1}{2}$  inch mounting screws, four coved spacers and locknuts. Tighten securely.

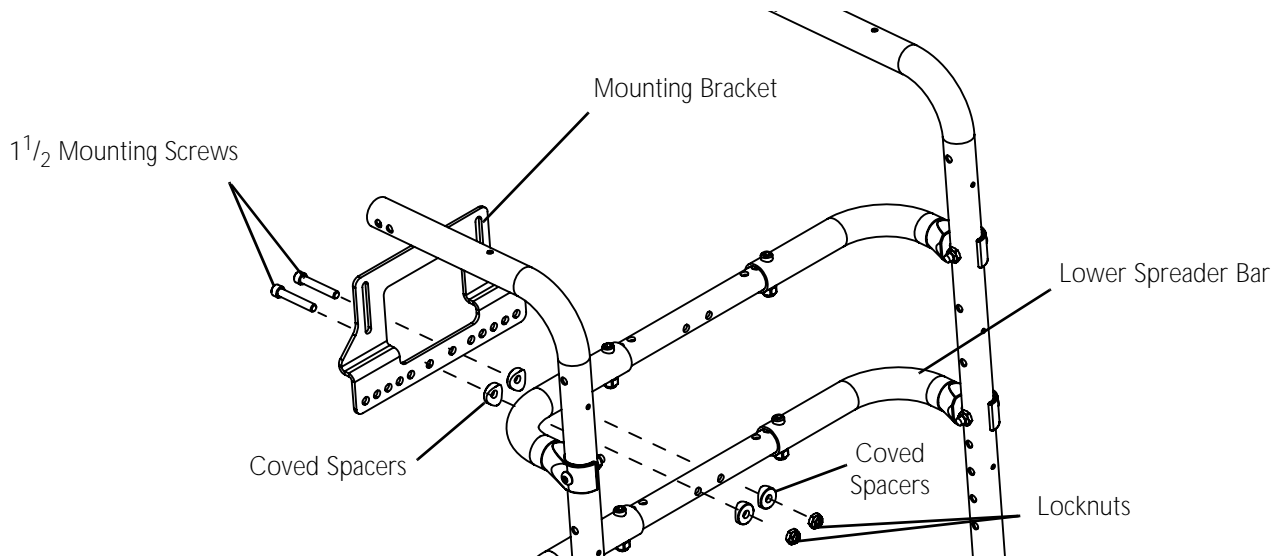


FIGURE 11.16 Install Mounting Bracket

## Install Vent Tray Assembly

NOTE: For this procedure, refer to FIGURE 11.17.

1. Secure vent tray assembly to upper spreader bar with two  $2\frac{1}{4}$  inch mounting screws, two spacers, four coved spacers, and two locknuts. Tighten securely.
2. Secure vent tray assembly to mounting bracket with two  $\frac{5}{8}$  inch mounting screw, washers, and locknuts. Tighten securely.

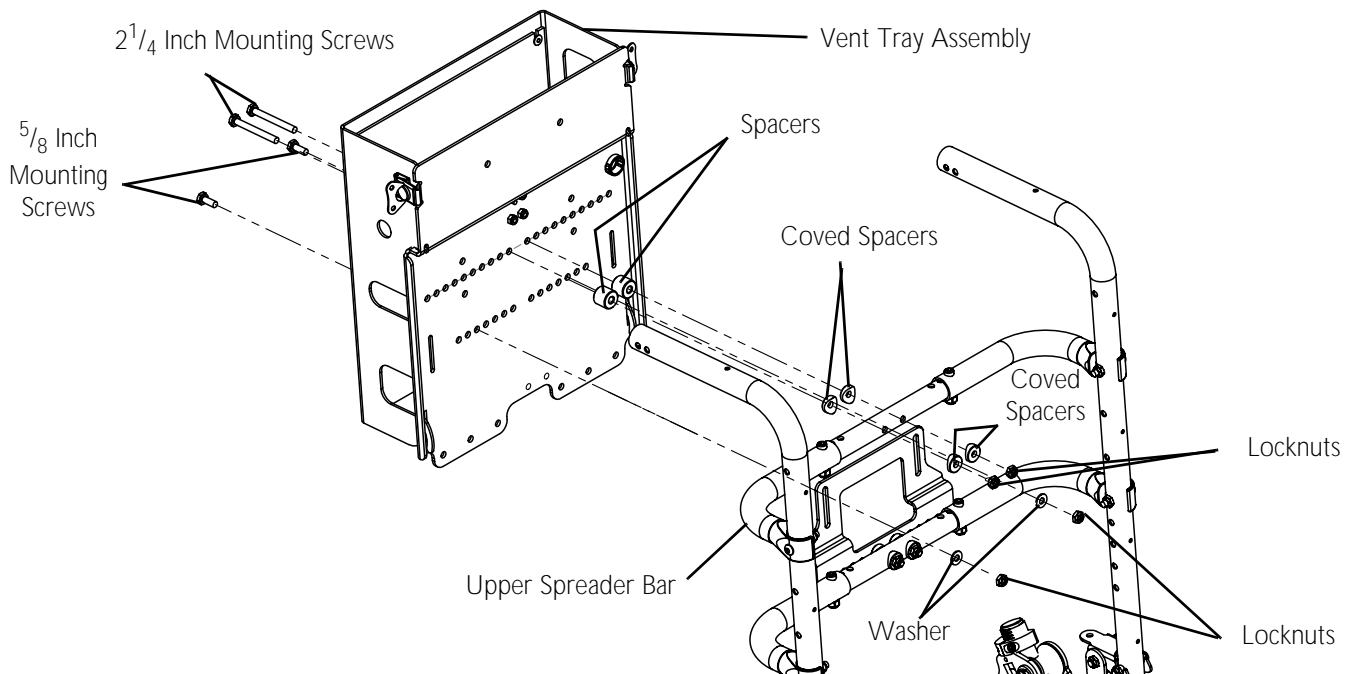


FIGURE 11.17 Install Vent Tray Assembly

## Install the Back Upholstery or Seating System

### Back Upholstery

*NOTE: For this procedure, refer to FIGURE 11.14 on page 106.*

1. Secure the back upholstery to the back canes with the mounting screws and washers. Tighten securely.

### Seating System

*NOTE: If wheelchair is equipped with seating system, install the seating system. Refer to the seating system owner's manual.*

## SECTION 12—WHEELS/FORKS

**⚠ WARNING**

After ANY adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

**Installing/Removing Rear Wheels****Quick-Release**

*NOTE: For this procedure, refer to FIGURE 12.1.*

*NOTE: To remove rear wheels, reverse this procedure.*

1. Push in the detent pin of the quick-release axle and insert the quick-release axle through the center of the rear wheel.
2. Push in the tip of the quick-release axle again and insert the axle (with wheel) into the axle mounting plate on the side of the wheelchair frame until the assembly locks in place.

**⚠ WARNING**

Make sure detent pin and locking pins of the quick-release axles are fully released before operating the wheelchair.

The locking pins **MUST** be protruding past the inside of the axle mounting plate for a positive lock.

Keep locking pins clean.

3. Ensure quick release axle locking pins are properly engaged and secure in the axle mounting plate by pulling the rear wheel away from the wheelchair frame. If the locking pins **DO NOT** engage or there is too much movement of the rear wheel assembly in a back and forth position. Refer to [Adjusting The Quick-Release Axle](#) on page 110.
4. Repeat STEPS 1-3 for other rear wheel assembly.
5. Adjust the wheel locks. Refer to [Wheel Lock Adjustment](#) on page 54.

*NOTE: Only 12-inch rear wheel is shown. All other wheels will install/remove in the same manner.*

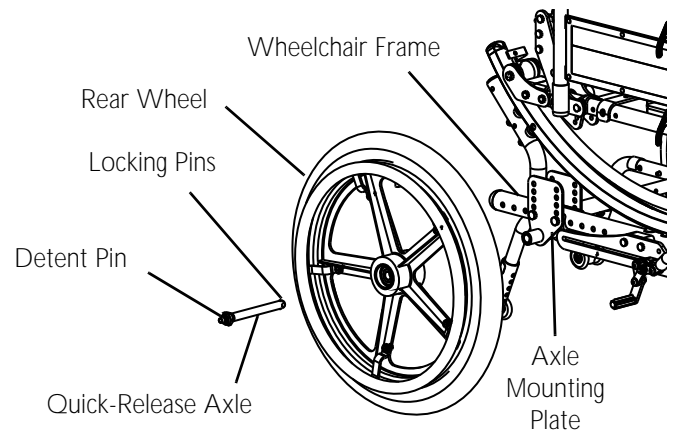
**Permanent Axle**

*NOTE: For this procedure, refer to FIGURE 12.2.*

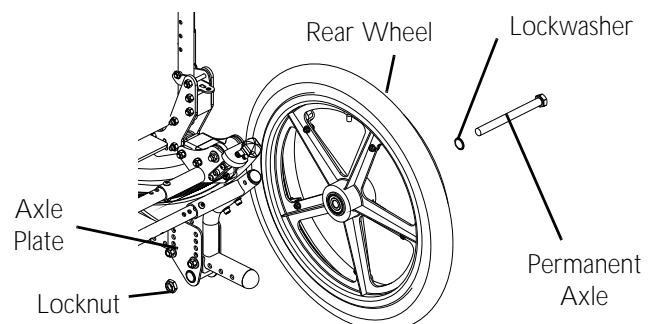
*NOTE: To remove rear wheels, reverse this procedure.*

1. Remove the permanent axles from the packaged container.
2. Install permanent axle through lock washer and the rear wheel and axle plate.
3. Securely tighten the wheel to the wheelchair frame with locknut.

*NOTE: Only 12-inch rear wheel is shown. All other wheels will install/remove in the same manner.*



**FIGURE 12.1** Installing/Removing Rear Wheels

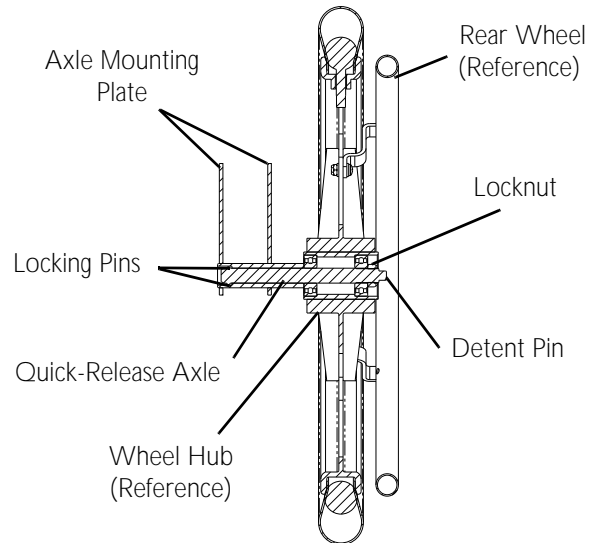


**FIGURE 12.2** Installing/Removing Rear Wheels - Permanent Axle

## Adjusting The Quick-Release Axle

*NOTE: For this procedure, refer to FIGURE 12.3.*

1. Remove rear wheel and quick-release axle from the wheelchair. Refer to [Installing/Removing Rear Wheels](#) on page 109.
2. Depress detent pin in the quick-release axle and slide axle through the wheel hub.
3. Increase or decrease end play in the quick release axle by adjusting the locknut on the end of the quick-release axle.
4. Reinstall rear wheel onto the wheelchair. Refer to [Installing/Removing Rear Wheels](#) on page 109.
5. Release detent pin ensuring that the locking pins are fully released.
6. Repeat STEPS 3-5 until the quick-release axle locks properly.
7. Repeat STEPS 1-6 for opposite side, if necessary.



**FIGURE 12.3** Adjusting The Quick-Release Axle

## Removing/Installing Handrims

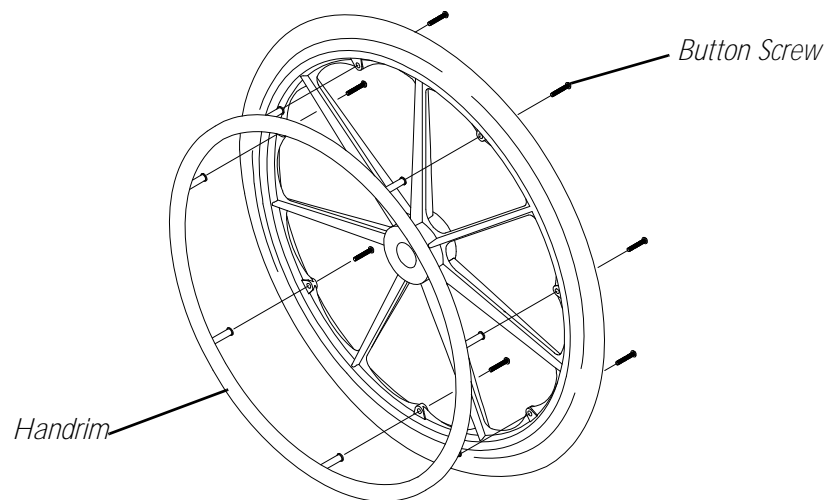
*NOTE: For this procedure, refer to FIGURE 12.4 on page 111.*

1. Remove the rear wheel from the wheelchair. Refer to Owner's Manual, part number 1080556.
2. Remove the mounting screws that secure the existing handrim to the rear wheel.
3. Remove the existing handrim and discard.
4. Secure new handrim to wheel with mounting screws. Tighten securely.

### **⚠ WARNING**

**Make sure detent pin and locking pins of the quick-release axles are fully released before operating the wheelchair.**

5. Reinstall rear wheel to the wheelchair. Refer to the Owner's Manual, part number 1080556.
6. Repeat STEPS 1-6 for the opposite rear wheel, if necessary.



**FIGURE 12.4** Removing/Installing Handrims

## Removing/Installing the Forks

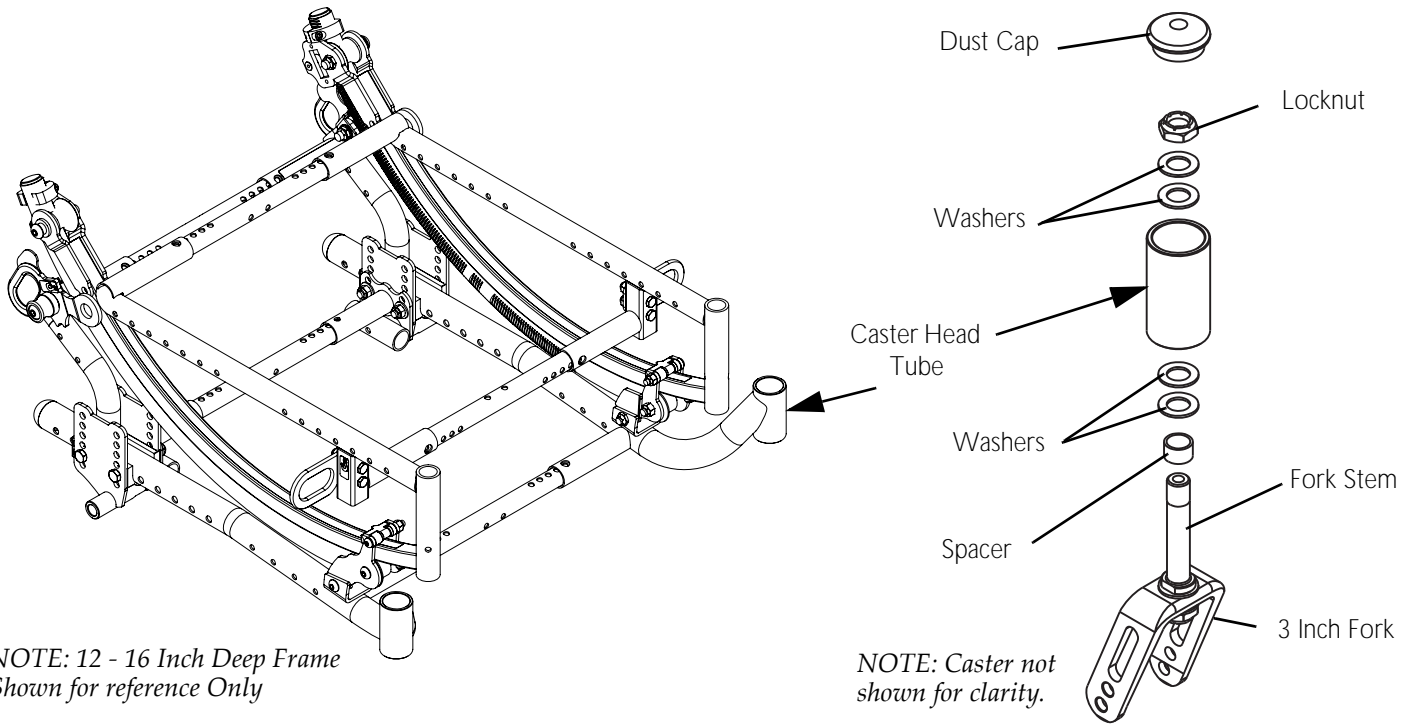
*NOTE: For this procedure, refer to FIGURE 12.5.*

### Removing

1. Remove the dust cap.
2. Remove the locknut from the fork stem.
3. Slide the stem out of the caster head tube.
4. Remove two washers from inside the caster head tube.
5. Remove the two washers and spacer from the fork stem.
6. If replacing the fork, remove the caster. Refer to [Removing/Installing the Forks](#) on page 111.

### Installing

1. If replacing the fork, install new caster. Refer to
2. Install spacer and two washers onto fork stem.
3. Insert fork stem into caster head tube.
4. Install two washers onto fork stem.
5. Secure fork stem in place with locknut. Tighten securely.
6. Install dust cap.



OTHER AVAILABLE FORKS

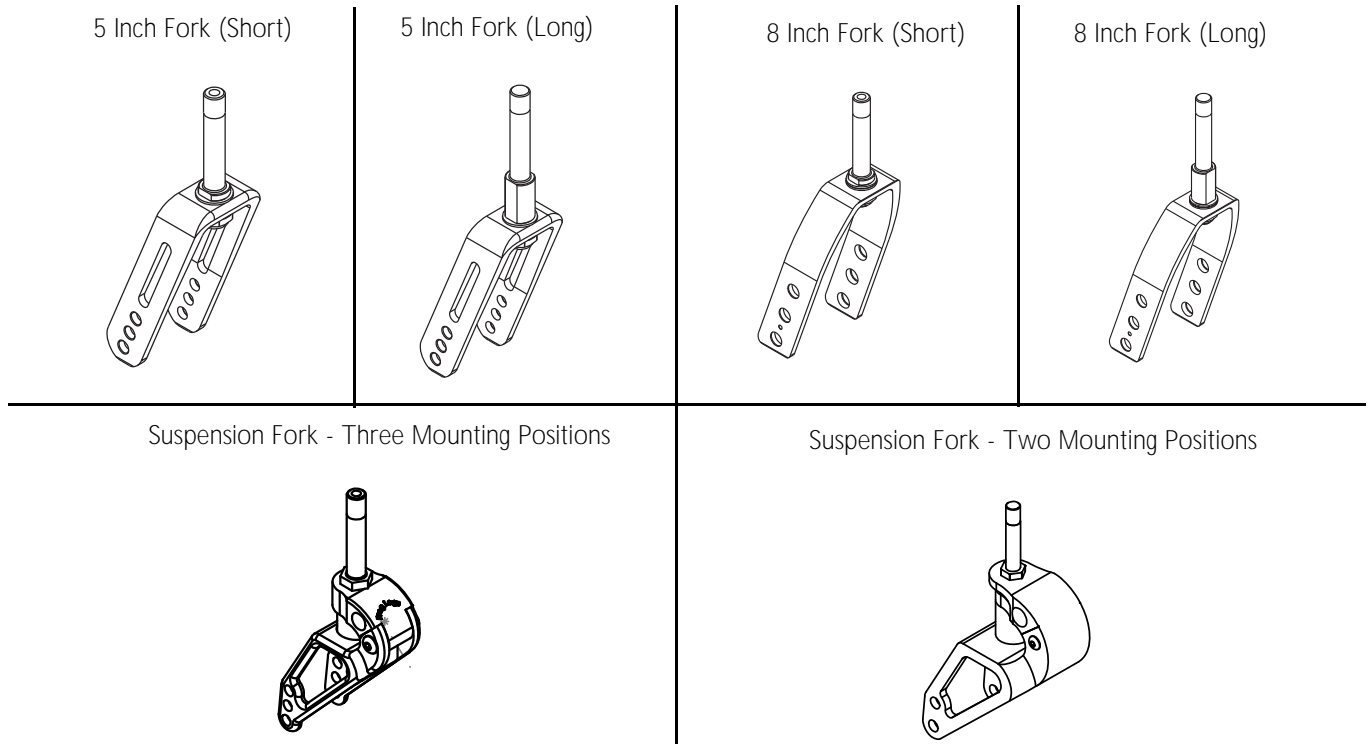


FIGURE 12.5 Removing/Installing the Forks



## Removing/Installing Casters

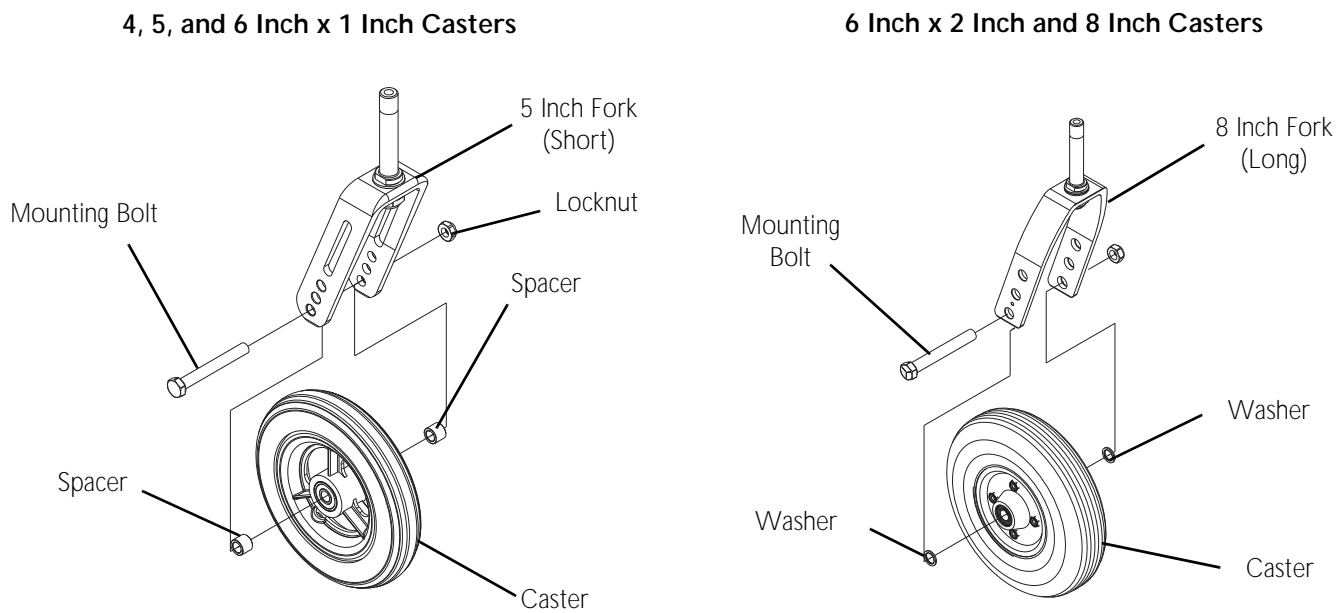
*NOTE: For this procedure, refer to FIGURE 12.6 on page 113.*

### Removing

1. Remove the mounting bolt, spacers (washers), and locknut that secures the caster to the fork.
2. Remove the caster from the fork.

### Installing

1. Position the caster in the fork as shown.
2. Secure the caster to the fork with mounting bolt, spacers (washers), and locknut. Tighten securely.



**FIGURE 12.6** Removing/Installing Casters

## Removing/Installing the Axle Mounting Bracket

### Removing

*NOTE: For this procedure, refer to FIGURE 12.7 on page 114.*

1. Remove the rear wheels. Refer to the owner's manual, p/n 1154295.
2. Remove the two mounting screws, washers, and locknuts that secures the right axle mounting bracket, uniwasher, and crossbrace tube to the base frame (Detail "A").
3. Remove the right axle mounting bracket from the base frame (Detail "A").
4. Remove the two mounting screws, washers, and locknuts that secures the left axle mounting bracket, uniwasher, and crossbrace tube to the base frame (Detail "B").

*NOTE: Solara 3G wheelchairs with vent tray option do not come equipped with the crossbrace tube located between axle brackets.*

5. Remove the crossbrace tube (if equipped) and left axle mounting bracket (Detail "B").

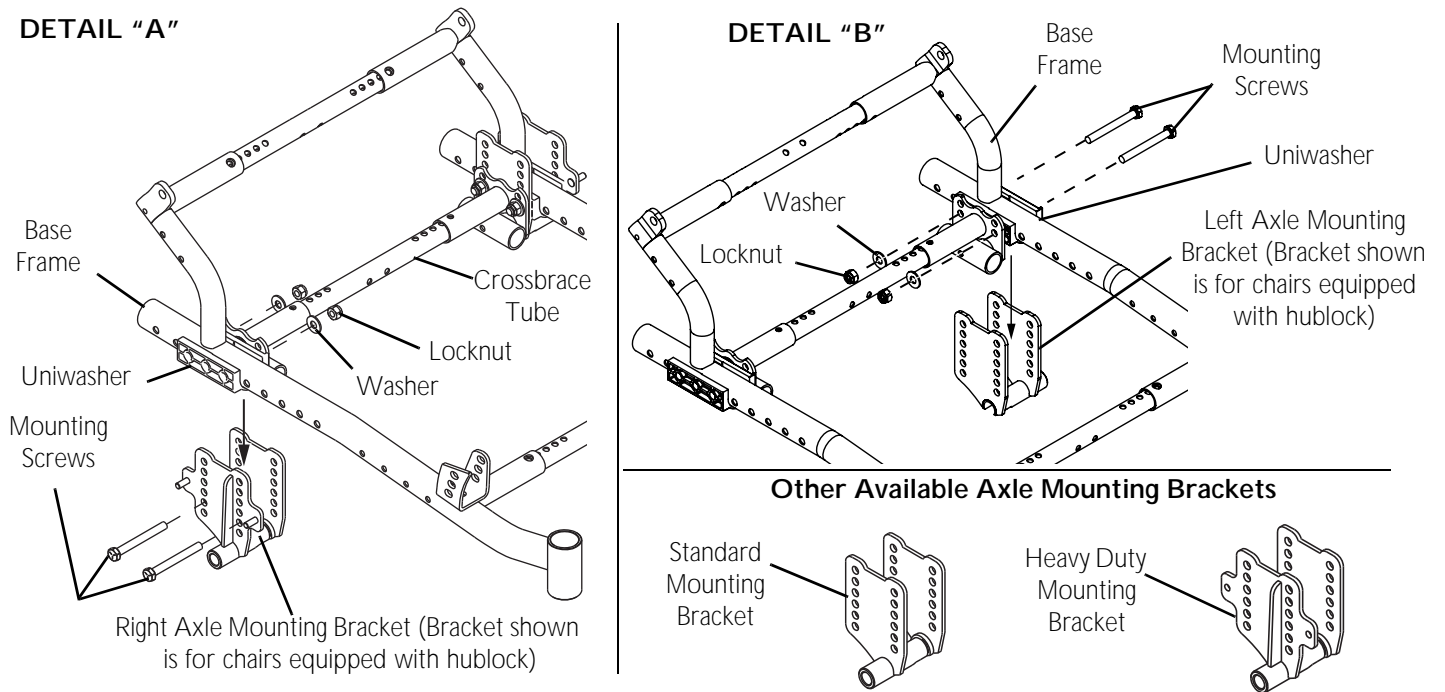


FIGURE 12.7 Removing/Installing the Axle Mounting Bracket

**Install**

1. Position the left axle mounting bracket over the uniwasher and base frame.
2. Secure the crossbrace tube, left axle mounting bracket, and uniwasher to the base frame with two mounting screws, washers, and locknuts. Tighten securely.
3. Secure the crossbrace tube, right axle mounting bracket, and uniwasher to the base frame with two mounting screws, washers, and locknuts. Tighten securely.

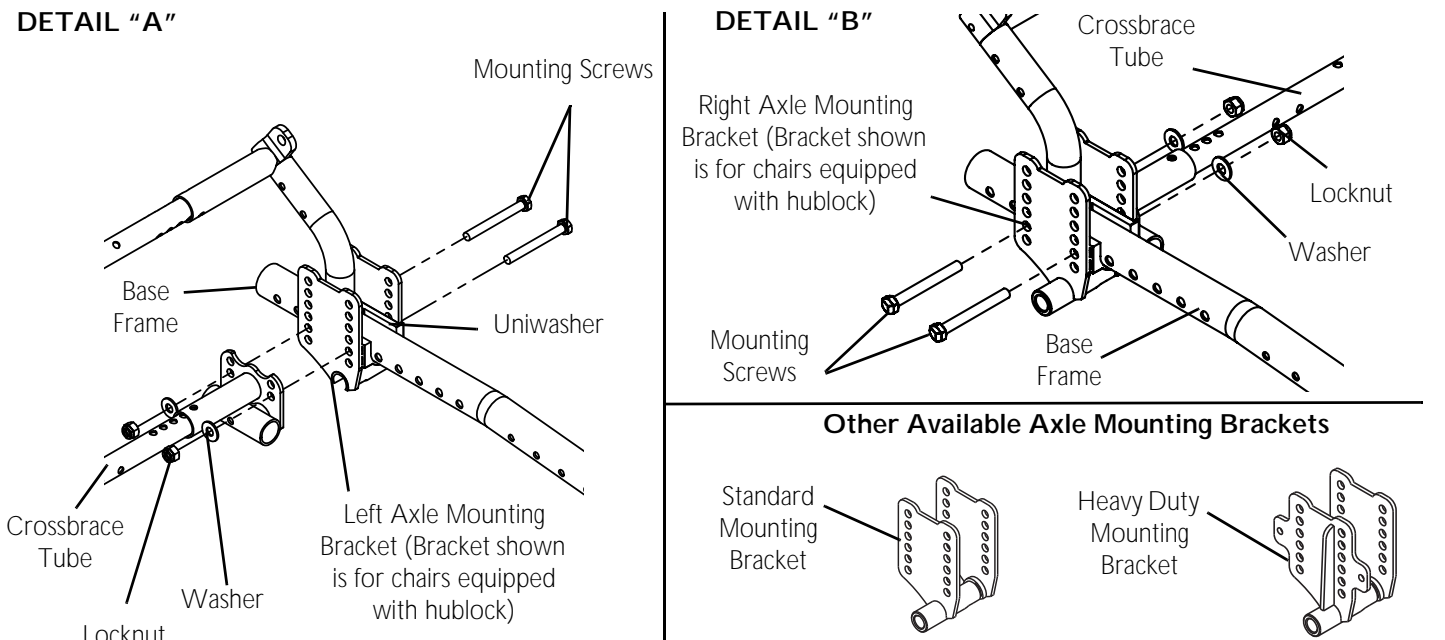


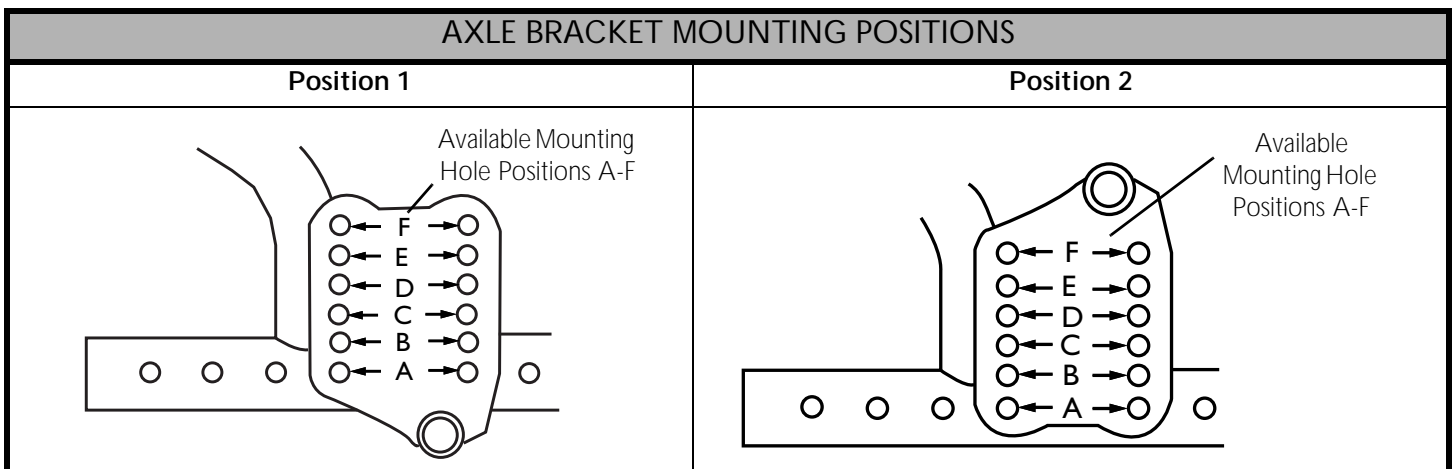
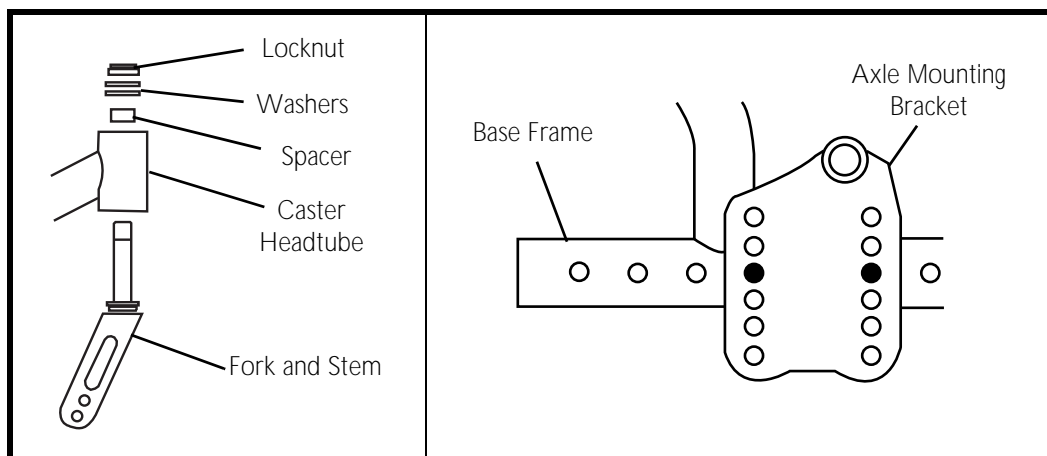
FIGURE 12.8

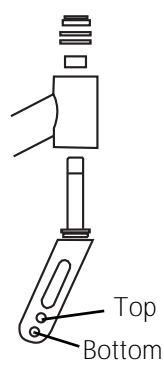
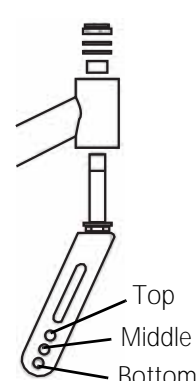
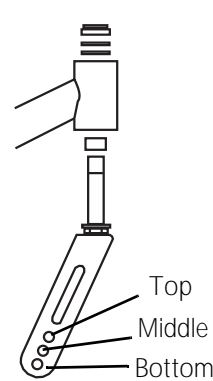
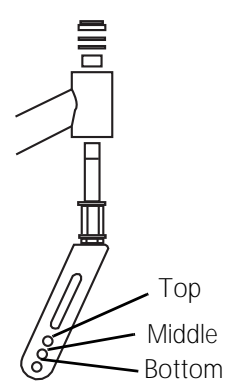
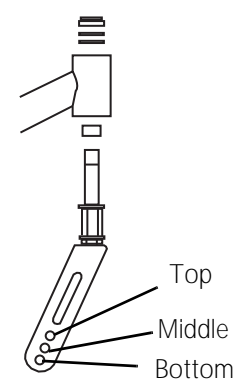
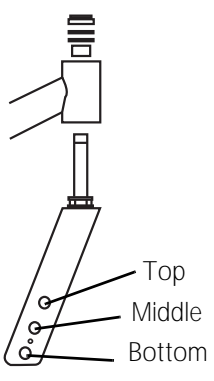
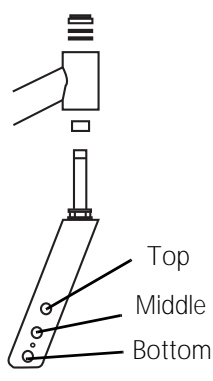
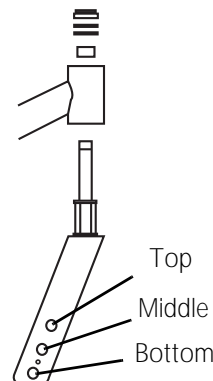
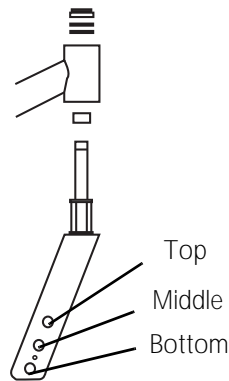
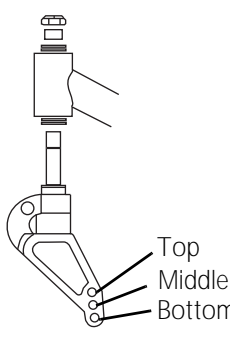
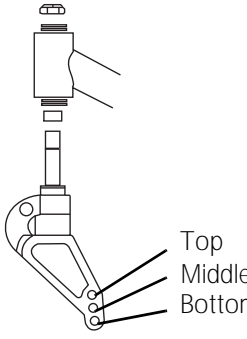
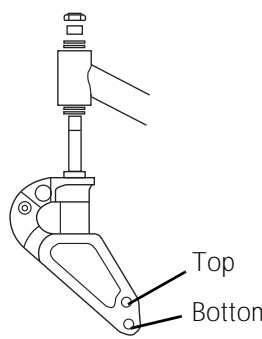
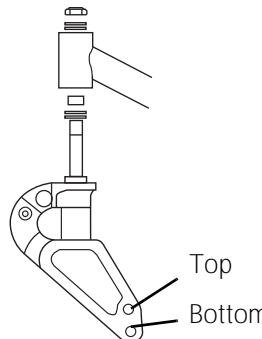
## Changing the Seat to Floor Height

1. Review [Component Identification](#) on page 115.
2. Review chart [Axle Bracket Mounting Positions](#) on page 115.
3. Review chart [Fork/Stem Options](#) on page 116.
4. Determine desired seat to floor height.
5. Proceed to chart with heading that matches desired seat to floor height.
6. Reconfigure wheelchair to the correct settings outlined in the chart determined in STEP 5.
7. The procedures needed to reconfigure the wheelchair are:
  - [Installing/Removing Rear Wheels](#) on page 109.
  - [Removing/Installing Casters](#) on page 113.
  - [Removing/Installing the Forks](#) on page 111.
  - [Removing/Installing the Axle Mounting Bracket](#) on page 113.

### Component Identification

*NOTE: The standard components used in all seat to floor combinations are identified in the first chart. The component combinations used in individual seat to floor heights are identified in the ensuing charts. The location of the spacer in the fork/stem assembly varies depending on the desired seat to floor height.*



FORK/STEM OPTIONS				
OPTION A	OPTION B	OPTION C	OPTION D	OPTION E
<p><b>3 Inch Fork</b></p> 	<p><b>5 Inch Fork (Short) with Spacer Above Caster Headtube</b></p> 	<p><b>5 Inch Fork (Short) with Spacer Below Caster Headtube</b></p> 	<p><b>5 Inch Fork (Long) with Spacer Above Caster Headtube</b></p> 	<p><b>5 Inch Fork (Long) with Spacer Below Caster Headtube</b></p> 
OPTION F	OPTION G	OPTION H	OPTION I	
<p><b>8 Inch Fork (Short) with Spacer Above Caster Headtube</b></p> 	<p><b>8 Inch Fork (Short) with Spacer Below Caster Headtube</b></p> 	<p><b>8 Inch Fork (Long) with Spacer Above Caster Headtube</b></p> 	<p><b>8 Inch Fork (Long) with Spacer Above Caster Headtube</b></p> 	
OPTION J	OPTION K	OPTION L	OPTION M	
<p><b>Suspension Fork Spacer Above Caster Headtube</b></p> 	<p><b>Suspension Fork Spacer Below Caster Headtube</b></p> 	<p><b>Suspension Fork Spacer Above Caster Headtube</b></p> 	<p><b>Suspension Fork Spacer Below Caster Headtube</b></p> 	

12.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	4 inch	Option A	Top	2	D
16 inch	4 inch	Option A	Top	2	A

13.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	4 inch	Option A	Bottom	2	E
12 inch	5 inch	Option A	Top	2	E
16 inch	4 inch	Option A	Bottom	2	B
16 inch	5 inch	Option A	Top	2	B

13.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch (Pneumatic, Pneumatic Flat Free)	4 inch	Option J	Top	2	F
12 inch	4 inch	Option B	Top	2	F
12 inch	5 inch	Option A	Bottom	2	F
16 inch	4 inch	Option B	Top	2	C
16 inch	5 inch	Option A	Bottom	2	C
16 inch	4 inch	Option J	Top	2	C
18 inch	4 inch	Option B	Top	2	A
18 inch	5 inch	Option A	Bottom	2	A
18 inch	4 inch	Option J	Top	2	A

14.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
16 inch	4 inch	Option B	Middle	2	D
16 inch	5 inch	Option B	Top	2	D
16 inch	4 inch	Option J	Middle	2	D

SECTION 12—WHEELS/FORKS

14.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
18 inch	4 inch	Option B	Middle	2	B
18 inch	5 inch	Option B	Top	2	B
18 inch	4 inch	Option J	Middle	2	B

14.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch (Urethane)	4 inch	Option C	Middle	1	A
12 inch (Urethane)	5 inch	Option B	Middle	1	A
12 inch (Urethane)	6 inch (Casters AT902 or 6ALUM2)	Option B	Top	1	A
12 inch (Urethane)	6 inch (Caster 1259)	Option F	Top	1	A
12 inch (Urethane)	4 inch	Option J	Bottom	1	A
12 inch (Urethane)	5 inch	Option J	Middle	1	A
16 inch	4 inch	Option C	Middle	2	E
16 inch	5 inch	Option B	Middle	2	E
16 inch	6 inch (Casters AT902 or 6ALUM2)	Option B	Top	2	E
16 inch	6 inch (Caster 1259)	Option F	Top	2	E
16 inch	4 inch	Option J	Bottom	2	E
16 inch	5 inch	Option J	Middle	2	E
18 inch	4 inch	Option C	Middle	2	C
18 inch	5 inch	Option B	Middle	2	C
18 inch	6 inch (Casters AT902 or 6ALUM2)	Option B	Top	2	C
18 inch	6 inch (Caster 1259)	Option F	Top	2	C
18 inch	4 inch	Option J	Bottom	2	C
18 inch	5 inch	Option J	Middle	2	C

15.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch (Urethane)	4 inch	Option D	Middle	1	B
12 inch (Urethane)	5 inch	Option C	Middle	1	B
12 inch (Urethane)	6 inch (Casters AT902 or 6ALUM2)	Option B	Middle	1	B
12 inch (Urethane)	6 inch (Caster 1259)	Option G	Top	1	B
12 inch (Urethane)	4 inch	Option K	Bottom	1	B
12 inch (Urethane)	5 inch	Option J	Bottom	1	B
16 inch	4 inch	Option D	Middle	2	F
16 inch	5 inch	Option C	Middle	2	F
16 inch	6 inch (Casters AT902 or 6ALUM2)	Option B	Middle	2	F
16 inch	6 inch (Caster 1259)	Option G	Top	2	F
16 inch	4 inch	Option K	Bottom	2	F
16 inch	5 inch	Option J	Bottom	2	F
18 inch	4 inch	Option D	Middle	2	D
18 inch	5 inch	Option C	Middle	2	D
18 inch	6 inch (Casters AT902 or 6ALUM2)	Option B	Middle	2	D
18 inch	6 inch (Caster 1259)	Option G	Top	2	D
18 inch	4 inch	Option K	Bottom	2	D
18 inch	5 inch	Option J	Bottom	2	D
20 inch	4 inch	Option D	Middle	2	A
20 inch	5 inch	Option C	Middle	2	A
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option B	Middle	2	A
20 inch	6 inch (Caster 1259)	Option G	Top	2	A
20 inch	4 inch	Option K	Bottom	2	A
20 inch	5 inch	Option J	Bottom	2	A

SECTION 12—WHEELS/FORKS

15.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	4 inch	Option E	Middle	1	A
12 inch	5 inch	Option D	Middle	1	A
12 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Middle	1	A
12 inch	6 inch (Caster 1259)	Option F	Middle	1	A
		Option H	Top		
12 inch (Pneumatic, Pneumatic Flat Free)	5 inch	Option K	Bottom	1	A
12 inch (Pneumatic, Pneumatic Flat Free)	6 inch (Casters AT902 or 6ALUM2)	Option J	Bottom	1	A
12 inch (Urethane)	5 inch	Option K	Bottom	1	C
12 inch (Urethane)	6 inch (Casters AT902 or 6ALUM2)	Option J	Bottom	1	C
18 inch	4 inch	Option E	Middle	2	E
18 inch	5 inch	Option D	Middle	2	E
18 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Middle	2	E
18 inch	6 inch (Caster 1259)	Option F	Middle	2	E
		Option H	Top		
18 inch	5 inch	Option K	Bottom	2	E
18 inch	6 inch (Casters AT902 or 6ALUM2)	Option J	Bottom	2	E
20 inch	4 inch	Option E	Middle	2	B
20 inch	5 inch	Option D	Middle	2	B
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Middle	2	B
20 inch	6 inch (Caster 1259)	Option F	Middle	2	B
		Option H	Top		
20 inch	5 inch	Option K	Bottom	2	B
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option J	Bottom	2	B



16.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	4 inch	Option E	Bottom	1	B
12 inch	5 inch	Option D	Bottom	1	B
12 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Bottom	1	B
12 inch	6 inch (Caster 1259)	Option G	Middle	1	B
		Option I	Top		
12 inch (Pneu- matic, Pneu- matic Flat Free)	6 inch (Casters AT902 or 6ALUM2)	Option K	Bottom	1	B
12 inch (Urethane)	6 inch (Casters AT902 or 6ALUM2)	Option K	Bottom	1	D
18 inch	4 inch	Option E	Bottom	2	F
18 inch	5 inch	Option D	Bottom	2	F
18 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Bottom	2	F
18 inch	6 inch (Caster 1259)	Option G	Middle	2	F
		Option I	Top		
18 inch	6 inch (Casters AT902 or 6ALUM2)	Option K	Bottom	2	F
20 inch	4 inch	Option E	Bottom	2	C
20 inch	5 inch	Option D	Bottom	2	C
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Bottom	2	C
20 inch	6 inch (Caster 1259)	Option G	Middle	2	C
		Option I	Top		
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option K	Bottom	2	C
22 inch	4 inch	Option E	Bottom	2	A
22 inch	5 inch	Option D	Bottom	2	A
22 inch	6 inch (Casters AT902 or 6ALUM2)	Option C	Bottom	2	A
22 inch	6 inch (Caster 1259)	Option G	Middle	2	A
		Option I	Top		

SECTION 12—WHEELS/FORKS

16.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
22 inch	6 inch (Casters AT902 or 6ALUM2)	Option K	Bottom	2	A

16.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	5 inch	Option E	Bottom	1	C
12 inch	6 inch (Casters AT902 or 6ALUM2)	Option D	Bottom	1	C
12 inch	6 inch (Caster 1259)	Option F	Bottom	1	C
		Option H	Middle		
12 inch	8 inch	Option F	Middle	1	C
12 inch (Pneumatic, Pneumatic Flat Free)	6 inch (Caster 1259)	Option L	Top	1	C
12 inch (Urethane)	6 inch (Caster 1259)	Option L	Top	1	E
20 inch	5 inch	Option D	Middle	2	D
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option D	Bottom	2	D
20 inch	6 inch (Caster 1259)	Option F	Bottom	2	D
		Option H	Middle		
20 inch	8 inch	Option F	Middle	2	D
20 inch	6 inch (Caster 1259)	Option L	Top	2	D
22 inch	5 inch	Option E	Bottom	2	B
22 inch	6 inch (Casters AT902 or 6ALUM2)	Option D	Bottom	2	B
22 inch	6 inch (Caster 1259)	Option F	Bottom	2	B
		Option H	Middle		
22 inch	8 inch	Option F	Middle	2	B
22 inch	6 inch (Caster 1259)	Option L	Top	2	B
24 inch	5 inch	Option E	Bottom	2	A

16.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
24 inch	6 inch (Casters AT902 or 6ALUM2)	Option D	Bottom	2	A
24 inch	6 inch (Caster 1259)	Option F	Bottom	2	A
		Option H	Middle		
24 inch	8 inch	Option F	Middle	2	A
24 inch	6 inch (Caster 1259)	Option I	Top	2	A

17.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	6 inch (Casters AT902 or 6ALUM2)	Option E	Bottom	1	D
12 inch	6 inch (Caster 1259)	Option G	Bottom	1	D
		Option I	Middle		
12 inch	8 inch	Option G	Middle	1	D
12 inch (Pneumatic, Pneumatic Flat Free)	6 inch (Caster 1259)	Option M	Top	1	D
12 inch (Urethane)	6 inch (Caster 1259)	Option M	Top	1	F
16 inch	6 inch (Casters AT902 or 6ALUM2)	Option E	Bottom	1	A
16 inch	6 inch (Caster 1259)	Option G	Bottom	1	A
		Option I	Middle		
16 inch	8 inch	Option G	Middle	1	A
16 inch	6 inch (Caster 1259)	Option M	Top	1	A
20 inch	6 inch (Casters AT902 or 6ALUM2)	Option E	Bottom	2	E
20 inch	6 inch (Caster 1259)	Option G	Bottom	2	E
		Option I	Middle		
20 inch	8 inch	Option G	Middle	2	E
20 inch	6 inch (Caster 1259)	Option M	Top	2	E

SECTION 12—WHEELS/FORKS

17.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
22 inch	6 inch (Casters AT902 or 6ALUM2)	Option E	Bottom	2	C
22 inch	6 inch (Caster 1259)	Option G	Bottom	2	C
		Option I	Middle		
22 inch	8 inch	Option G	Middle	2	C
22 inch	6 inch (Caster 1259)	Option M	Top	2	C
24 inch	6 inch (Casters AT902 or 6ALUM2)	Option E	Bottom	2	B
24 inch	6 inch (Caster 1259)	Option G	Bottom	2	B
		Option I	Middle		
24 inch	8 inch	Option G	Middle	2	B
24 inch	6 inch (Caster 1259)	Option M	Top	2	B

17.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	6 inch (Caster 1259)	Option H	Bottom	1	E
12 inch	8 inch	Option F	Bottom	1	E
12 inch (Pneumatic, Pneumatic Flat Free)	6 inch (Caster 1259)	Option L	Bottom	1	E
16 inch	6 inch (Caster 1259)	Option H	Bottom	1	B
16 inch	8 inch	Option F	Bottom	1	B
		Option H	Middle		
16 inch	6 inch (Caster 1259)	Option L	Bottom	1	B
20 inch	6 inch (Caster 1259)	Option H	Bottom	2	F
20 inch	8 inch	Option F	Bottom	2	F
		Option H	Middle		
20 inch	6 inch (Caster 1259)	Option L	Bottom	2	F

17.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
22 inch	6 inch (Caster 1259)	Option H	Bottom	2	D
22 inch	8 inch	Option F	Bottom	2	D
		Option H	Middle		
24 inch	6 inch (Caster 1259)	Option H	Bottom	2	C
24 inch	8 inch	Option F	Bottom	2	C
		Option H	Middle		
24 inch	6 inch (Caster 1259)	Option L	Bottom	2	C

18.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
12 inch	8 inch	Option G	Bottom	1	F
12 inch (Pneumatic, Pneumatic Flat Free)	6 inch (Caster 1259)	Option M	Bottom	1	F
16 inch	6 inch (Caster 1259)	Option I	Bottom	1	C
16 inch	8 inch	Option G	Bottom	1	C
		Option I	Top		
16 inch	6 inch (Caster 1259)	Option M	Bottom	1	C
18 inch	6 inch (Caster 1259)	Option I	Bottom	1	A
18 inch	8 inch	Option G	Bottom	1	A
		Option I	Middle		
18 inch	6 inch (Caster 1259)	Option M	Bottom	1	A
22 inch	6 inch (Caster 1259)	Option I	Bottom	2	E
22 inch	8 inch	Option G	Bottom	2	E
		Option I	Middle		
22 inch	6 inch (Caster 1259)	Option M	Bottom	2	E
24 inch	6 inch (Caster 1259)	Option I	Bottom	2	D

SECTION 12—WHEELS/FORKS

18.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
24 inch	8 inch	Option G	Bottom	2	D
		Option I	Middle		
24 inch	6 inch (Caster 1259)	Option M	Bottom	2	D

18.50 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
16 inch	8 inch	Option H	Bottom	1	D
16 inch	8 inch	Option L	Bottom	1	D
18 inch	8 inch	Option H	Bottom	1	B
18 inch	8 inch	Option L	Bottom	1	B
22 inch	8 inch	Option H	Bottom	2	F
22 inch	8 inch	Option L	Bottom	2	F
24 inch	8 inch	Option H	Bottom	2	E
24 inch	8 inch	Option L	Bottom	2	E

19.00 INCH SEAT TO FLOOR HEIGHT					
Rear Wheel	Use Caster Size:	Use Fork/ Stem Option:	Use Caster Mounting Position:	Use Axle Mounting Bracket Position:	Use Axle Mounting Bracket Holes:
16 inch	8 inch	Option I	Bottom	1	E
16 inch	8 inch	Option M	Bottom	1	E
18 inch	8 inch	Option I	Bottom	1	C
18 inch	8 inch	Option M	Bottom	1	C
24 inch	8 inch	Option I	Bottom	2	F
24 inch	8 inch	Option M	Bottom	2	F

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## SECTION 13—WHEEL LOCKS

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### ⚠ WARNING

After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur.

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## Installing/Removing the Foot Operated Wheel Lock

### Installing the Foot Operated Wheel Lock

*NOTE: For this procedure, refer to .FIGURE 13.1.*

1. Secure the right hand pivot footlock plate to the right side of the wheelchair frame with two  $1\frac{3}{4}$  inch mounting screws and locknuts (Detail "A").
2. Slide the right hand footlock lever assembly into the sleeve and right hand pivot footlock plate (Detail "A").
3. Install  $\frac{1}{4}$  inch mounting screw into footlock lever assembly to the inside of the right hand pivot footlock plate securing the footlock lever in place (Detail "A").
4. Slide crossbrace onto the footlock lever assembly and slide completely over next to wheelchair frame (Detail "B").
5. Repeat STEPS 1-3 for left hand footlock lever assembly (Detail "C").
6. Slide crossbrace to center and secure in place with two  $1\frac{1}{4}$  inch mounting screws, spacers, and locknuts (Detail "D").
7. Secure the wheel lock assembly and mounting block to the base frame with two  $2\frac{3}{4}$  inch mounting screws, washers, lock washers, and threaded tab. Tighten securely (Detail "E").
8. Secure the connecting link to the footlock lever assembly with  $\frac{3}{4}$  inch mounting screw, washers, and locknut. Tighten securely (Detail "E").
9. Secure the connecting link to the wheel lock assembly with  $1\frac{1}{8}$  inch mounting screw, spacer, washer, and locknut. Tighten securely (Detail "E").
10. Torque all hardware to 50 in.-lbs. (min).
11. Repeat STEPS 1-10 for left side of wheelchair frame.

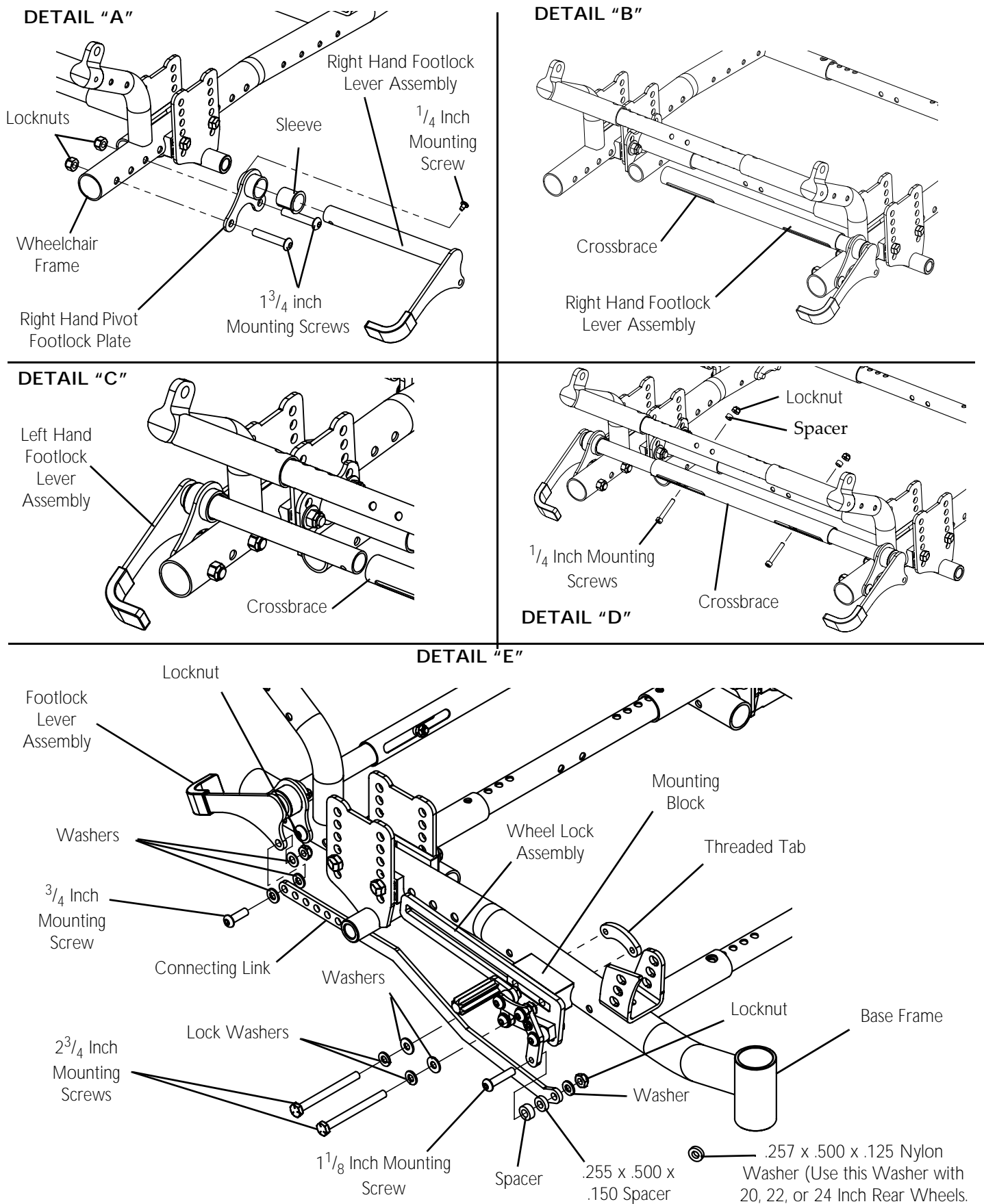


FIGURE 13.1 Installing/Removing the Foot Operated Wheel Lock



## Removing the Foot Operated Wheel Lock

*NOTE: For this procedure, refer to FIGURE 13.1 on page 128.*

1. Remove the  $1\frac{1}{8}$  inch mounting screw, spacer, washer, and locknut that secures the connecting link to the wheel lock assembly (Detail "E").
2. Remove the  $\frac{3}{4}$  inch mounting screw, washers, and locknut that secures the connecting link to the footlock lever assembly (Detail "E").
3. Remove the connecting link.
4. Remove the two  $2\frac{3}{4}$  inch mounting screws, washers, lock washers, and threaded tab that secure the wheel lock assembly and mounting block to the base frame (Detail "E").
5. Remove the wheel lock assembly, mounting block, and threaded tab.
6. Remove the two  $1\frac{1}{4}$  inch mounting screws, spacers, and locknuts that secures the crossbrace in place (Detail "D").
7. Remove the  $\frac{1}{4}$  inch mounting screw that secures the footlock lever in place (Detail "A").
8. Remove the two  $1\frac{3}{4}$  inch mounting screws and locknuts that secures the pivot footlock plate to the wheelchair frame (Detail "A").
9. Remove the crossbrace, footlock lever assembly, and pivot footlock plate.
10. Repeat STESP 1-6 for foot operated wheel lock on opposite side of wheelchair.

## Installing/Removing the Hand Operated Wheel Lock

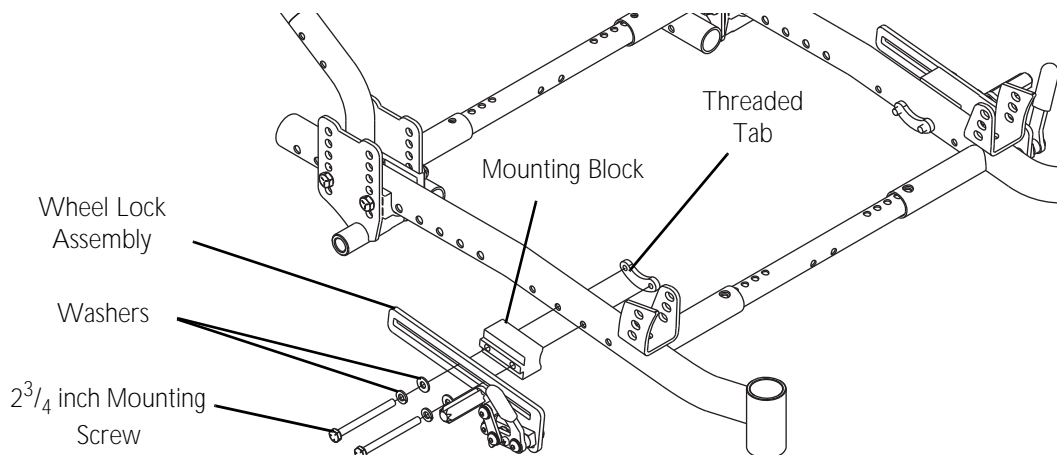
*NOTE: For this procedure, refer to FIGURE 13.2.*

### Installing

1. Secure the wheel lock assembly and mounting block to the base frame with two  $2\frac{3}{4}$  inch mounting screws, washers, lock washers, and threaded tab. Tighten securely (Detail "E").
2. Repeat STEP 1 for remaining wheel lock assembly.

### Removing

1. Remove the two  $2\frac{3}{4}$  inch mounting screws, washers, lock washers, and threaded tab that secure the wheel lock assembly and mounting block to the base frame
2. Repeat STEP 1 for remaining wheel lock assembly.



**FIGURE 13.2** Installing/Removing the Hand Operated Wheel Lock

## SECTION 14—RECLINER BACK

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### ⚠ WARNING

After ANY adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

The back height, seat depth, back angle, seating system, tilt angle, seat height, size/position of the rear wheels, size/position of the front casters, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the eleven may cause the wheelchair to decrease in stability. These adjustments MUST be performed by a qualified technician.

---

### CAUTION

DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.

---

### Adjusting the Recliner Cables

*NOTE: Refer to [Adjusting the Gas Cylinders](#) on page 134.*

### Removing/Installing the Recliner Cables

*NOTE: For this procedure, refer to FIGURE 14.1 on page 132.*

*NOTE: For ease of assembly, replace one recliner cable at a time.*

#### Removing

1. Cut the tie wraps that secure the recliner cable to the back cane.
2. Remove the mounting screw and the locknut that secures the recline trigger release lever to the back cane.

*NOTE: Save the mounting screw and locknut for reuse when installing the new recliner cables.*

3. Remove the recline trigger release lever from the back cane.
4. Loosen the cable locking nut that secures the recliner cable to the recline trigger release lever (Detail "A").
5. Unscrew the cable locking collar that secures the recliner cable to the recline trigger release lever (Detail "A").
6. Remove the end of the recliner cable from the slot in the recline trigger release lever (Detail "A").
7. Unscrew the fitting end of the recliner cable from the recline trigger release lever (Detail "A").
8. Unscrew the cable locking nut that secures the recliner cable to the actuator housing (Detail "B").
9. Remove the end of the recliner cable from the actuator.
10. Remove the recliner cable from the wheelchair.

#### Installing

1. Screw the recliner cable into the recline trigger release lever until the fitting end of the cable is flush with the inside of the handle (Detail "A").
2. Install the end of the recliner cable into the slot in the recline trigger release lever (Detail "A").
3. Screw the cable locking collar onto the trigger release lever until the collar bottoms out on the trigger release lever (Detail "A").
4. While holding the cable locking collar and locking nut, tighten the cable locking nut against the cable locking collar (Detail "A").

**CAUTION**

Ensure that the recline trigger release lever operating the RIGHT gas cylinder secures to the LEFT side of the adjustable angle stroller handle and that the recline trigger release lever operating the LEFT gas cylinder secures to the RIGHT side of the adjustable angle stroller handle, allowing the cables to form an "X" pattern (Detail "A" of FIGURE 14.1). Otherwise, damage to the cables may occur.

---

5. While standing behind the wheelchair, secure the recline trigger release lever operating the right gas cylinder to the left side of the adjustable angle stroller handle with the existing mounting screw and locknut (Detail "C"). Securely tighten.
- 

**CAUTION**

**DO NOT over tighten the new cable into the actuator housing. Damage to the actuator housing can occur.**

---

6. Screw the end of the new recliner cable into the actuator housing until the cable is tightened securely (Detail "B").
7. Install the end of the recliner cable onto the actuator (Detail "B").

*NOTE: Make sure the recliner cable is positioned in the slot in the actuator.*

8. Secure the recline cables to the back canes using new tie wraps (Detail "C").
9. Repeat Removing on page 130 and Installing on page 130 for the opposite recliner cable, if necessary.
10. Test the operation of the gas cylinders. Refer to Adjusting the Gas Cylinders on page 134.

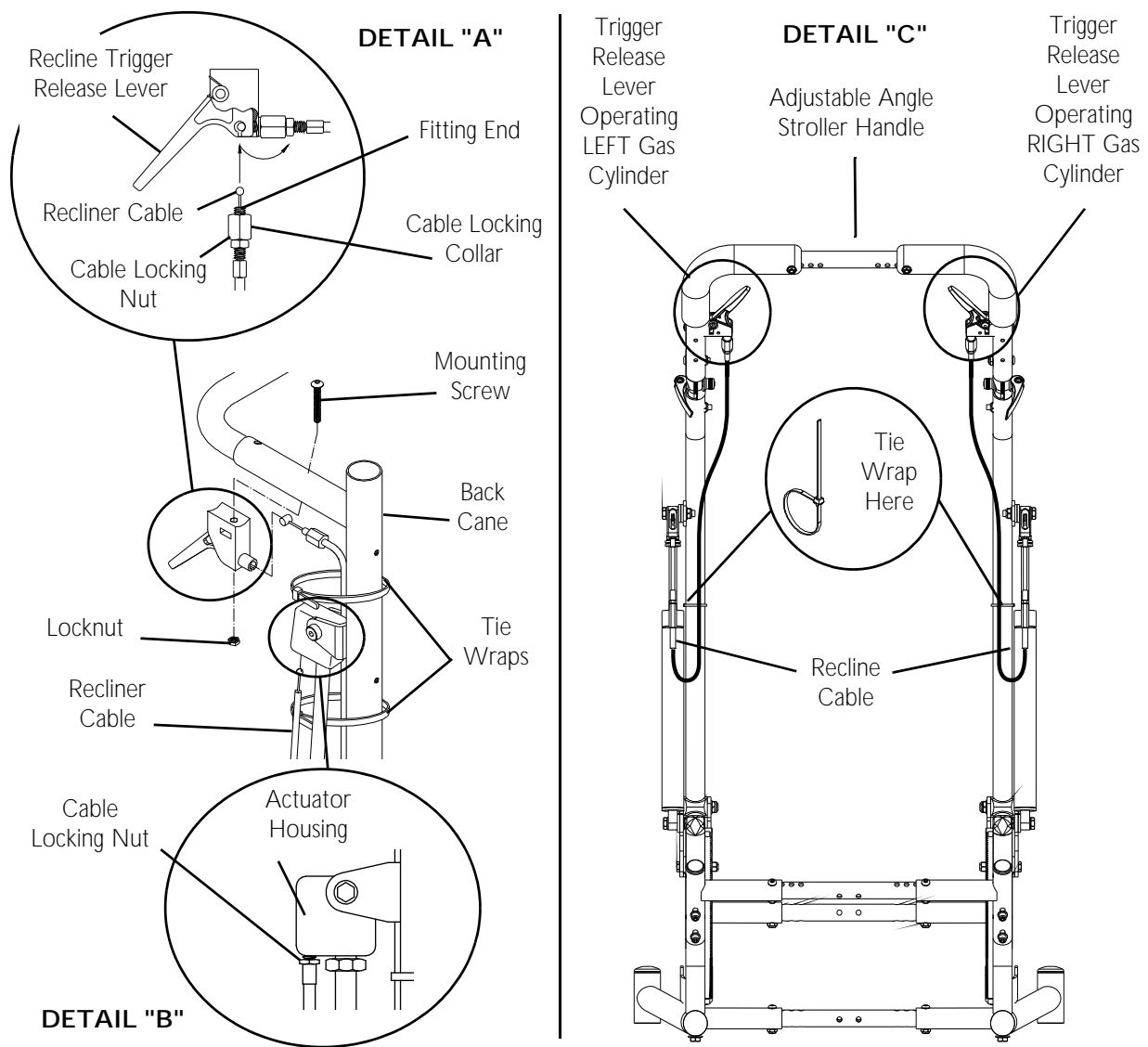


FIGURE 14.1 Removing/Installing the Recliner Cables

## Replacing the Gas Cylinders

### ⚠ WARNING

Both gas cylinders **MUST** be operational and adjusted properly before using the recliner. **DO NOT** operate the recliner if only one of the gas cylinders is operational or adjusted properly.

*NOTE: For this procedure, refer to FIGURE 14.2 on page 133.*

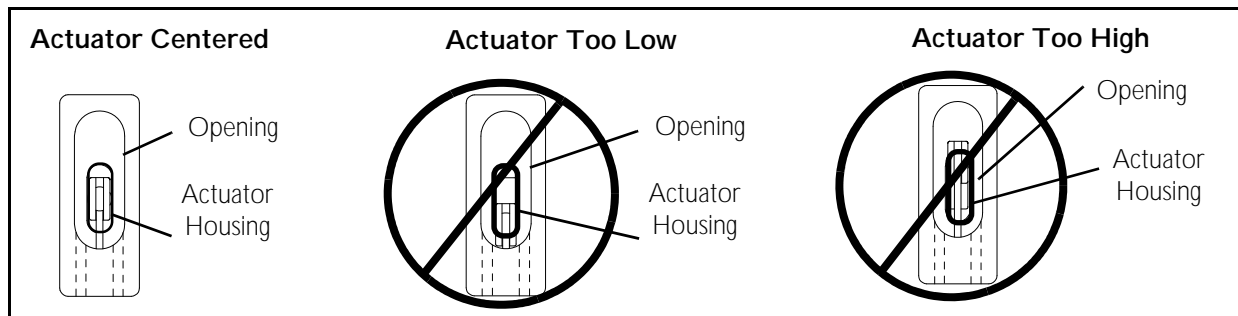
1. Loosen the jam nut on the rod of the existing gas cylinder that secures the gas cylinder to the actuator housing.
2. Remove the button head cap screw, spacer, nylon washer, washer and locknut that secure the bottom of the existing gas cylinder to the recliner brackets.
3. Unscrew the existing gas cylinder from the actuator housing and remove the existing gas cylinder from the wheelchair.

*NOTE: Save the button head cap screw, spacer, nylon washer, washer and locknut for reuse when installing the new gas cylinder.*

4. Finger tighten jam nut on the new gas cylinder until it bottoms out on the cylinder rod.

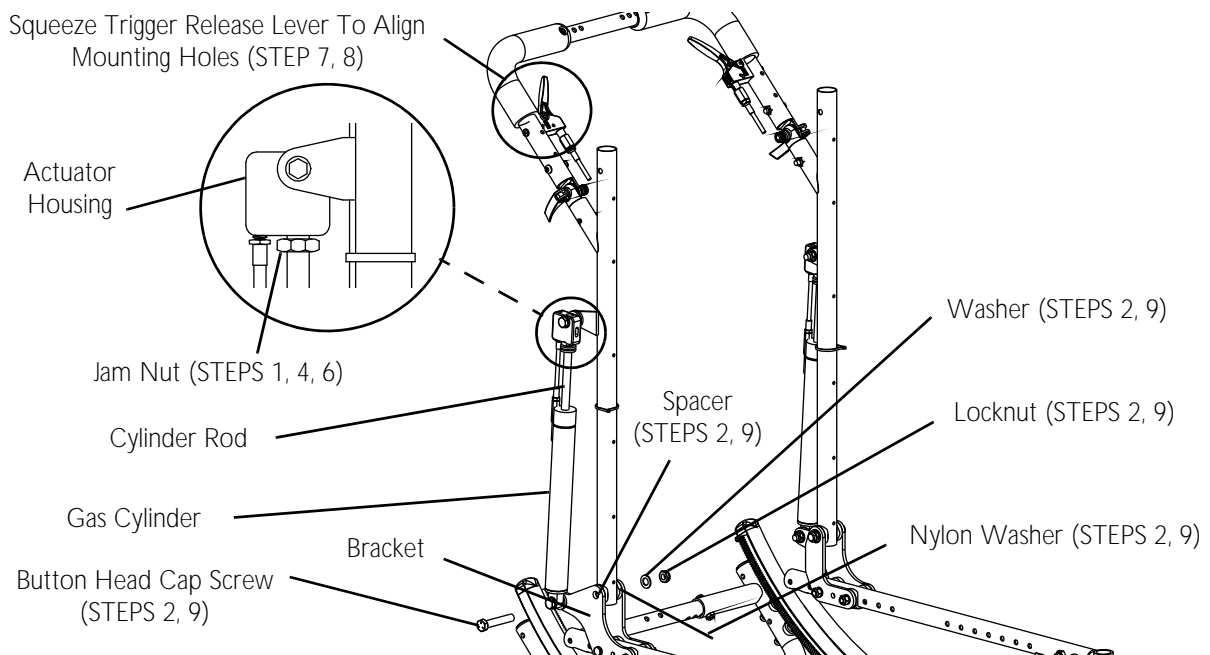
**⚠ WARNING**

Screw the rod of the gas cylinder into the actuator housing **ONLY** until the actuator is centered in the opening of the actuator housing.



Screwing the rod of the gas cylinder too far past center of the opening in the actuator housing will activate the gas cylinders providing **NO** support for the back. Possible injury to the user and/ or attendant could result.

5. Screw the cylinder rod of the new gas cylinder into the actuator housing only until the actuator is centered in the actuator housing. Refer to the above warning.
  6. Tighten the jam nut on the rod of the new gas cylinder that secures the gas cylinder to the actuator housing.
- NOTE:* The gas cylinders are controlled by the trigger release levers mounted on the opposite sides of the gas cylinders. The right trigger release lever controls the Left gas cylinder, and the left trigger release lever controls the right gas cylinder.
7. Squeeze the trigger release lever that controls the existing gas cylinder (the gas cylinder that has NOT been removed).
  8. While squeezing the trigger, raise or lower the recliner back until the mounting holes of the new gas cylinder align with the mounting holes in the bracket of the back cane.
  9. Reinstall the existing button head cap screw through the existing recliner brackets, spacer, gas cylinder, nylon washer, mounting bracket and washer and tighten securely with the existing locknut.
  10. If necessary, repeat STEPS 1-9 for the opposite gas cylinder.
  11. Adjust the new gas cylinder(s). Refer to [Adjusting the Gas Cylinders](#) on page 134.



**FIGURE 14.2** Replacing the Gas Cylinders

## Adjusting the Gas Cylinders

### ⚠ WARNING

Both gas cylinders **MUST** be operational and adjusted properly before using the recliner. **DO NOT** operate the recliner if only one of the gas cylinders is operational or adjusted properly.

*NOTE: For this procedure, refer to FIGURE 14.3 on page 135.*

### Determining Necessary Adjustments

*NOTE: The gas cylinders are controlled by the trigger release levers mounted on the opposite sides of the gas cylinders. The right trigger release lever controls the left gas cylinder, and the left trigger release lever controls the right gas cylinder.*

Refer to the following chart to determine the necessary adjustments:

ACTION	NECESSARY ADJUSTMENTS
Back releases <b>WITHOUT</b> squeezing <b>EITHER</b> trigger release lever. (Actuator too <b>LOW</b> .)	Adjust the <b>LEFT AND RIGHT</b> gas cylinders
Back <b>DOES NOT</b> release while squeezing <b>BOTH</b> trigger release levers. (Actuator too <b>HIGH</b> .)	Adjust the <b>LEFT AND RIGHT</b> gas cylinders.

ACTION	NECESSARY ADJUSTMENTS
Back releases while squeezing the <b>LEFT</b> trigger release lever <b>ONLY</b> . (Actuator too <b>LOW</b> .)	Adjust the <b>LEFT</b> gas cylinders <b>ONLY</b> .
Back releases while squeezing the <b>RIGHT</b> trigger release lever <b>ONLY</b> . (Actuator too <b>LOW</b> .)	Adjust the <b>RIGHT</b> gas cylinders <b>ONLY</b> .

### Performing Adjustments

### ⚠ WARNING

Both gas cylinders **MUST** be operational and adjusted properly before using the recliner. **DO NOT** operate the recliner if only one of the gas cylinders is operational or adjusted properly.

- To adjust the left gas cylinder: Loosen the cable locking nut that secures the cable adjusting nut in place.
- Turn the cable adjusting nut one of two ways:

### ⚠ WARNING

**DO NOT** over tighten the adjusting nut on the recliner cable. Overtightening the adjusting nut on the recliner cable will actuate the gas cylinder, possibly causing injury.

- Clockwise - Turning the cable adjusting nut clockwise will tighten the recliner cable. **DO NOT** overtighten the cable adjusting nut. Turn the cable adjusting nut clockwise until actuator looks like Detail "B" of FIGURE 14.3.
- Counterclockwise - Turning the cable adjusting nut counterclockwise will loosen the recliner cable.

*NOTE: If the recliner cable is too loose, the gas cylinders will not work.*

- While holding the cable adjusting nut in place, tighten the cable locking nut against the cable adjusting nut.
- Repeat STEP 1.
- Repeat STEP 2 until the left side of the back does not recline.
- Squeeze the trigger release lever of the right recliner cable assembly and try to recline the back. The back should not recline.
- To adjust the right gas cylinder: Repeat STEPS 1-3 for the left handle of the recliner cable.

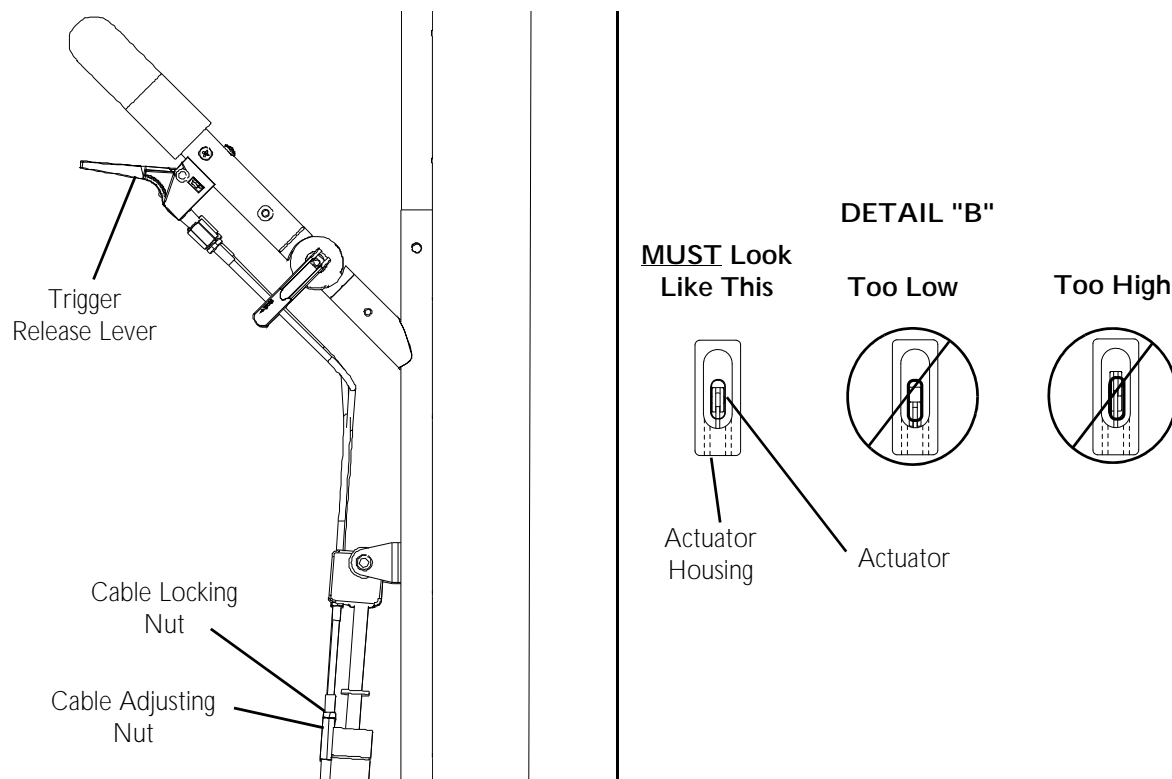
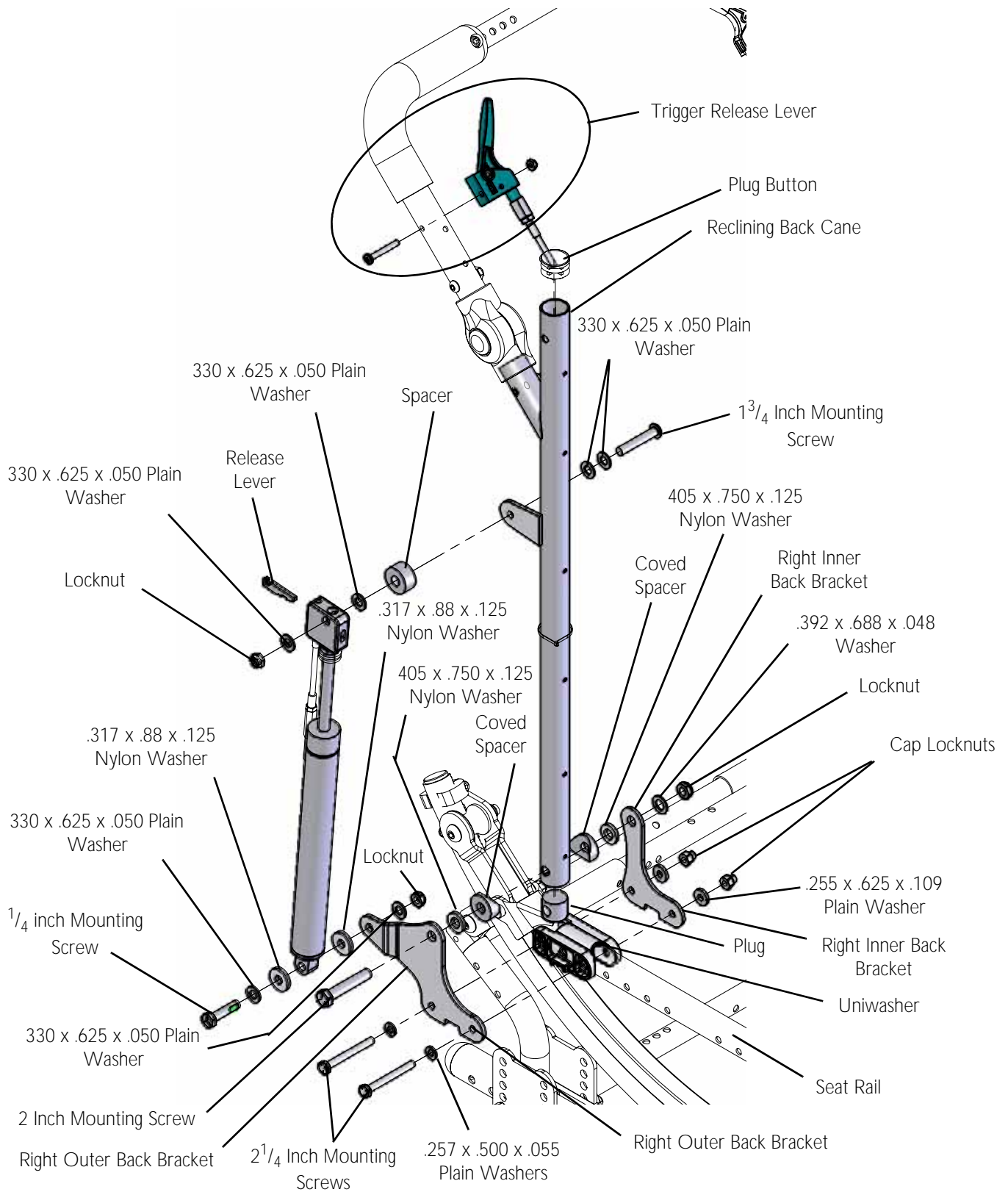


FIGURE 14.3 Adjusting the Gas Cylinders

## Installing the Reclining Back

NOTE: For this procedure, refer to FIGURE 14.4 on page 136.

1. Remove seating system. Refer to the seating system Owner's Manual for installation and removal.
2. Remove the trigger release lever with cable from the back cane. Refer to Removing/Installing the Trigger Release Lever with Cable on page 97.
3. Repeat STEP 1 for remaining back cane.
4. Remove the stroller handle. Refer to Installing/Removing Non-Adjustable Angle Stroller Handles on page 33 or Installing/Removing Adjustable Angle Stroller Handle on page 33.
5. Remove the rigidizer bar. Removing/Installing the Rigidizer Bar on page 30.
6. Remove the seat pan. Refer to After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may occur. on page 55.
7. Remove the back canes. Refer to Removing/Installing Back Canes on page 30.
8. Secure the right outer back bracket, uniwasher, and inner back bracket to the seat rail with two 2<sup>1</sup>/<sub>4</sub> inch mounting screws, two .257 x .500 x .055 plain washers, two .255 x .625 x .109 plain washers, two cap locknuts.
9. Secure the back cane to the right outer back bracket, right inner back bracket with two inch mounting screw, two .405 x .750 x .125 nylon washers, two coved spacers, plug, .392 x .688 x .048 washer, and locknut. Tighten securely.
10. Secure the bottom of the gas cylinder to the outer back bracket with 1<sup>1</sup>/<sub>4</sub> inch mounting screw, two .330 x .625 x .050 plain washers, two .317 x .88 x .125 nylon washers, and locknut. Tighten securely.
11. Secure the top of the gas cylinder and release lever to the back cane with 1<sup>3</sup>/<sub>4</sub> inch mounting screw, spacer, four .330 x .625 x .505 plain washers, and locknut. Tighten securely.
12. Install plug button
13. Install trigger release lever. Refer to Removing/Installing the Trigger Release Lever with Cable on page 97.
14. Repeat STEPS 1-13 for remaining back cane.



**FIGURE 14.4** Installing the Reclining Back



## SECTION 15—CONTRACTURE FOOTREST

### Removing/Installing the Contracture Footrest Platform

#### Removing

1. Remove the two mounting screws that secure the contracture crossbrace to the seat rails.
2. Remove the contracture footrest platform assembly from the wheelchair.

#### Installing

1. Secure the contracture crossbrace to the seat rails with two mounting screws. Securely tighten.

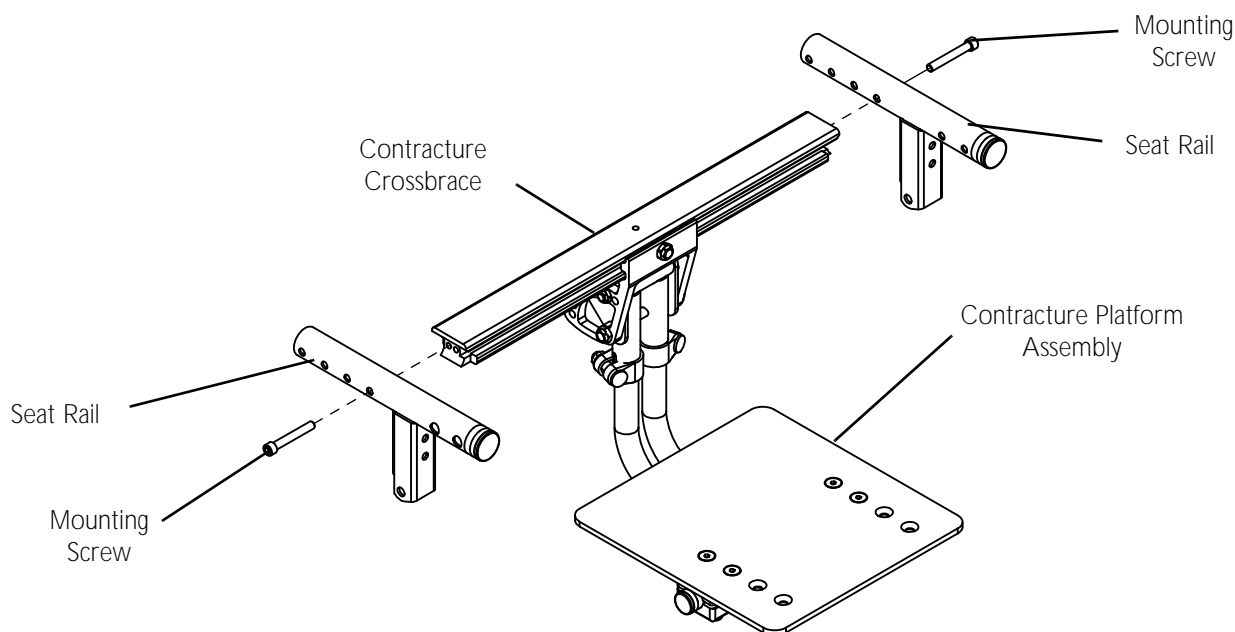


FIGURE 15.1 Removing/Installing the Contracture Footrest Platform

### Assembly/Disassembly of the Contracture Footrest Platform

#### Assembly

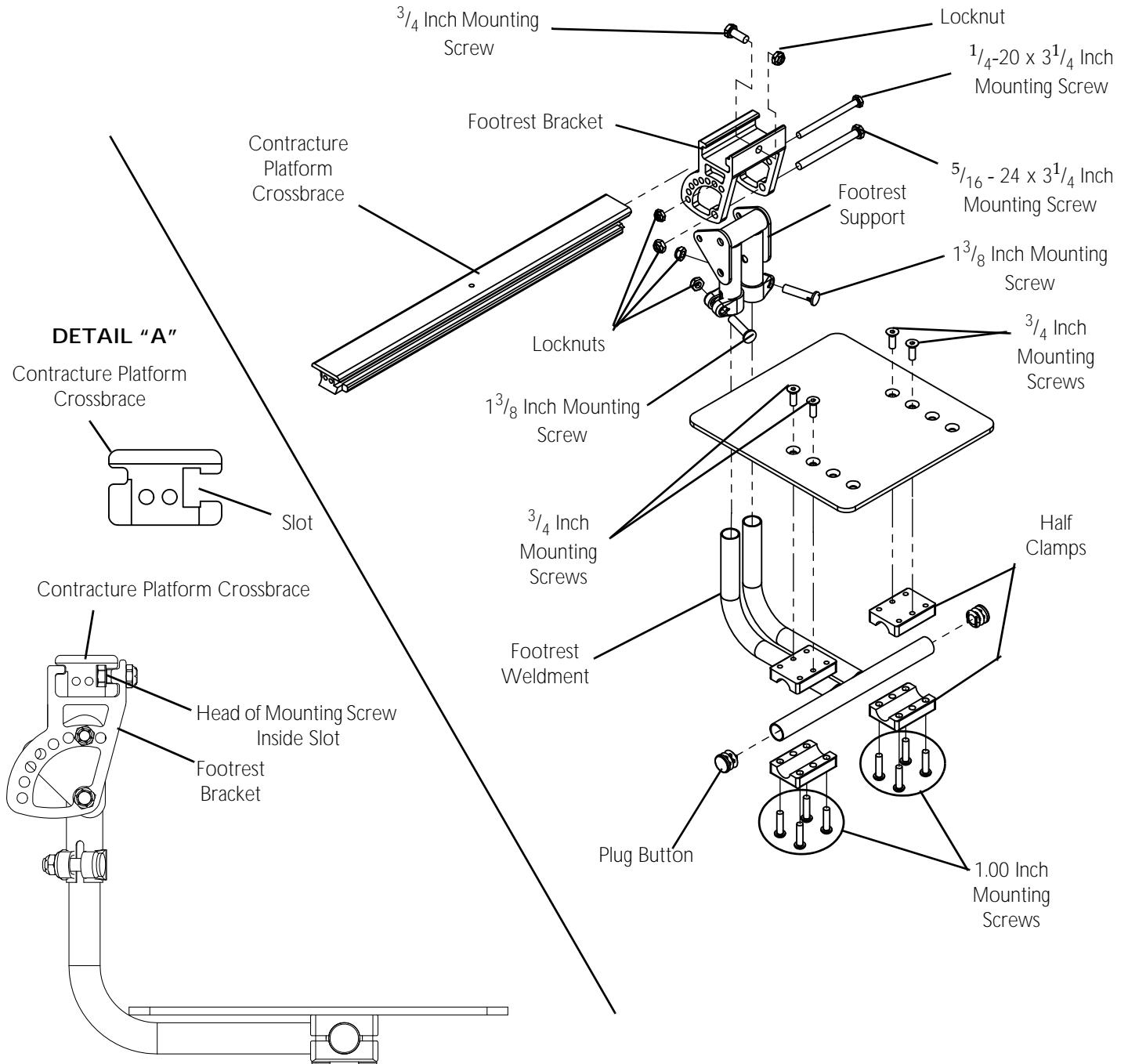
NOTE: For this procedure, refer to FIGURE 15.2 on page 138.

1. Install plug buttons into crossmember of footrest weldment.
2. Secure the platform and half clamps to the footrest weldment with four  $\frac{3}{4}$  inch mounting screws and eight 1 inch mounting screws. Tighten securely.
3. Insert both tubes of footrest weldment into upper footrest support.
4. Secure footrest weldment in place with two  $1\frac{3}{8}$  inch mounting screws. Securely tighten.
5. Install upper footrest support into footrest bracket.
6. Secure footrest support to footrest bracket at the desired angle with  $\frac{5}{16}$  - 24 x  $3\frac{1}{4}$  inch mounting screw and  $\frac{1}{4}$  - 20 x  $3\frac{1}{4}$  inch mounting screw and two locknuts. Tighten securely.
7. Loosely secure  $\frac{3}{4}$  inch mounting screw to the footrest bracket with locknut.

## SECTION 15—CONTRACTURE FOOTREST

*NOTE: When performing STEP 8, note the slot in the contracture crossbrace is shaped to fit the head of the mounting screw that is mounted in the footrest bracket.*

8. Align footrest bracket and mounting screw with slot in contracture crossbrace (Detail "A").
9. Position footrest bracket in desired location on crossbrace and securely tighten the locknut.
10. Install contracture platform on to the wheelchair. Refer to Removing/Installing the Contracture Footrest Platform on page 137.



**FIGURE 15.2** Assembly/Disassembly of the Contracture Footrest Platform

## Disassembly

*NOTE: For this procedure, refer to FIGURE 15.2 on page 138.*

1. Remove contracture platform from the wheelchair. Refer to [Removing/Installing the Contracture Footrest Platform](#) on page 137.
2. Loosen the locknut that secures the footrest bracket in place on the contracture platform crossbrace.
3. Slide the footrest bracket out of the slot in contracture crossbrace (Detail "A").
4. Remove the  $\frac{5}{16} - 24 \times 3\frac{1}{4}$  inch mounting screw and  $\frac{1}{4}$ -20 inch mounting screw and two locknuts that secure footrest support to footrest bracket.
5. Remove upper footrest support from footrest bracket.
6. Loosen the two  $1\frac{3}{8}$  inch mounting screws that secures the footrest weldment in place.
7. Remove the footrest weldment from the footrest support.
8. Remove the four  $\frac{3}{4}$  inch mounting screws and eight 1 inch mounting screws that secure the platform and half clamps to the footrest weldment

## SECTION 16—TRANSPORT READY

### Solara 3G Transport Brackets Retro-Fit Kit (TRBKTS)

This kit (TRBKTS) includes four wheelchair transport brackets. TRBKTS has not been crash-tested in accordance with WC 19. Invacare recommends that these transport brackets be used only to secure an unoccupied wheelchair during transport.

As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type. It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation system.

### Removing Existing Transport Brackets

*NOTE: For this procedure, refer to FIGURE 16.1 on page 141.*

#### 12-16 Inch Deep Seat Frames.

1. Remove the mounting screw, housing spring, bushing, washers and locknut that secures the rear tie down bracket and safety tie down bracket to the gear rack/track tube and wheelchair frame (Detail "A").
2. Remove the mounting screw, washer, spacer and locknut that secures the roller to the rocker tube (Detail "B").
3. Repeat STEPS 1-2 for remaining transport bracket.

#### 15-19 Inch Deep and 18-22 Inch Deep Seat Frames

1. Remove the mounting screw, housing spring, bushing, washers and locknut that secures the rear tie down bracket and safety tie down bracket to the gear track/track tube and wheelchair frame (Detail "C").
2. Remove the mounting screw, washer, spacer and locknut that secures the roller to the rocker tube (Detail "C").
3. Remove the mounting screw and locknut that secures the seat frame to the rocker tube (Detail "D").
4. Repeat STEPS 1-3 for remaining transport bracket.

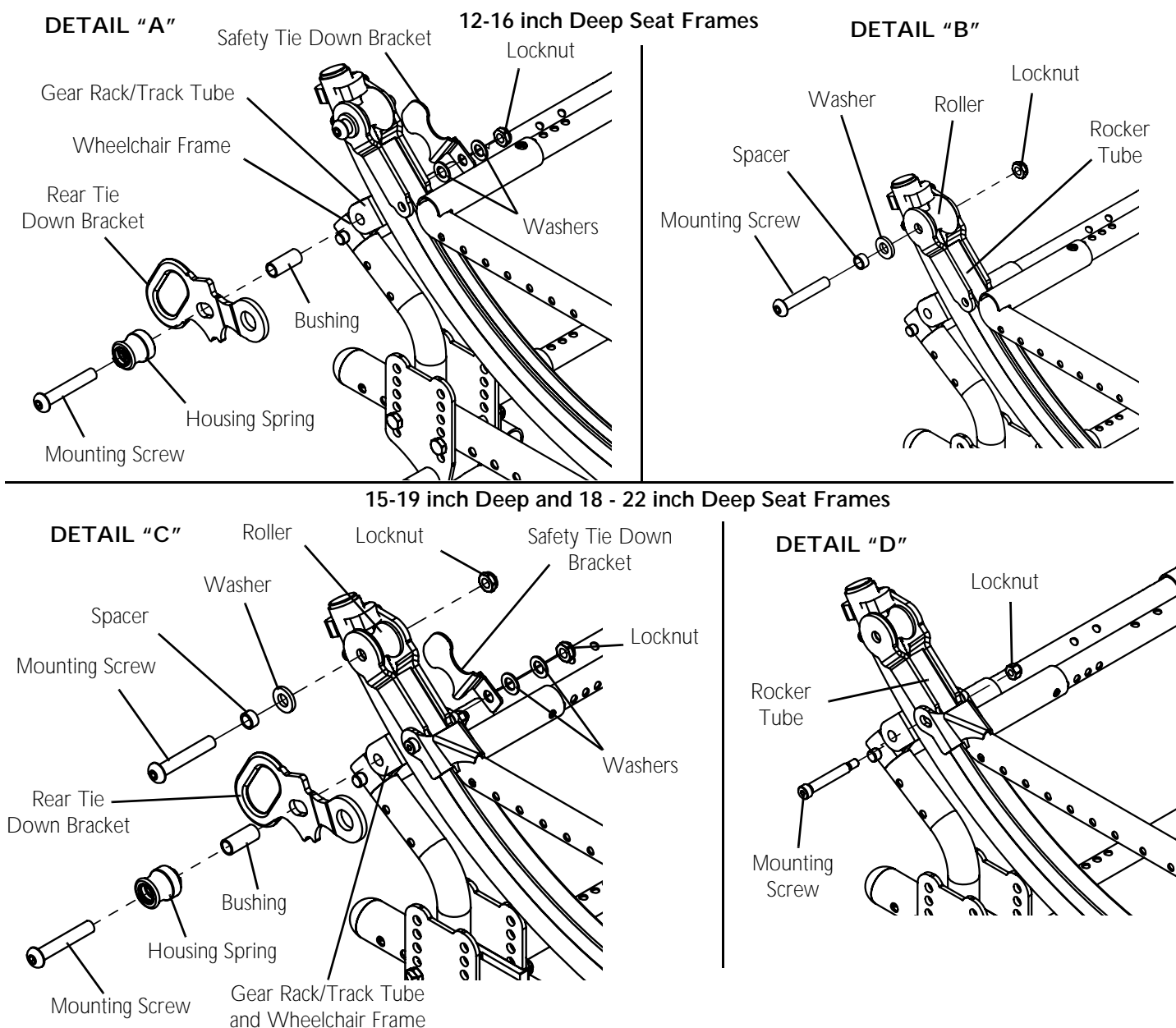


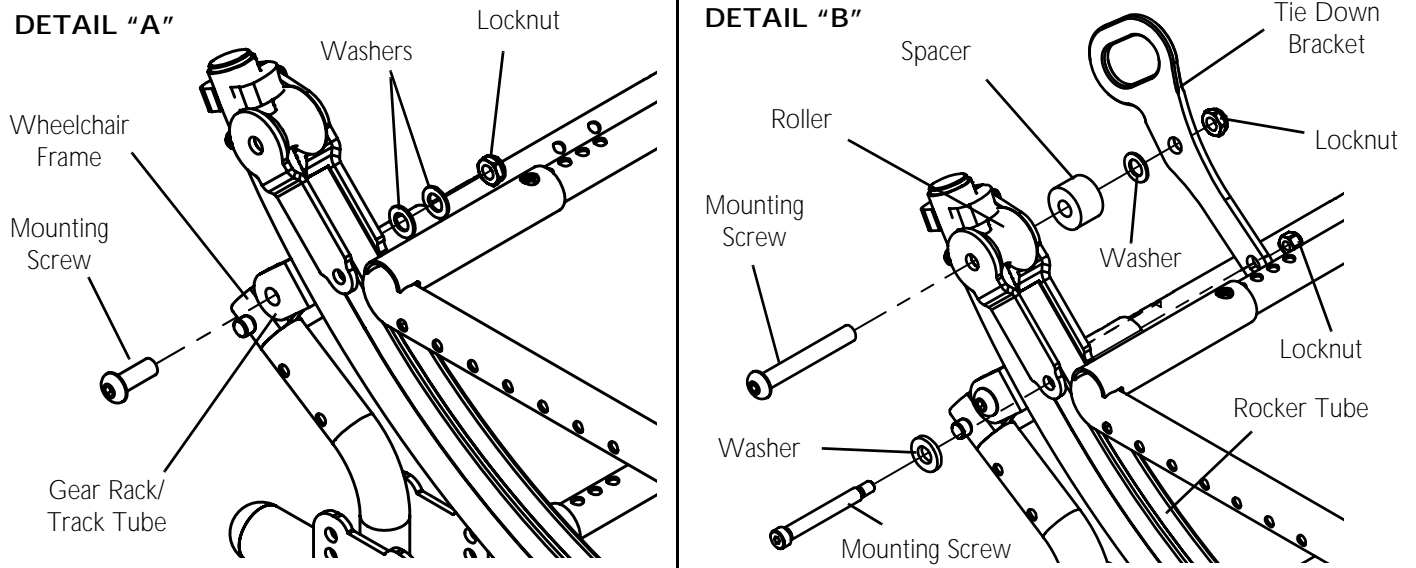
FIGURE 16.1 Removing Existing Transport Brackets

## Install New Transport Brackets

### 12-16 Inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 16.2 on page 142.*

1. Secure the gear rack/track tube to the wheelchair frame with mounting screw, two washers and locknut (Detail "A"). Tighten securely.
2. Secure the tie down bracket to the rocker tube with mounting screw, spacer, washer, and locknut (Detail "B"). Tighten securely.
3. Secure the tie down bracket to the rocker tube with mounting screw, washer, and locknut. Tighten securely.
4. Repeat STEPS 1-3 for remaining transport bracket.

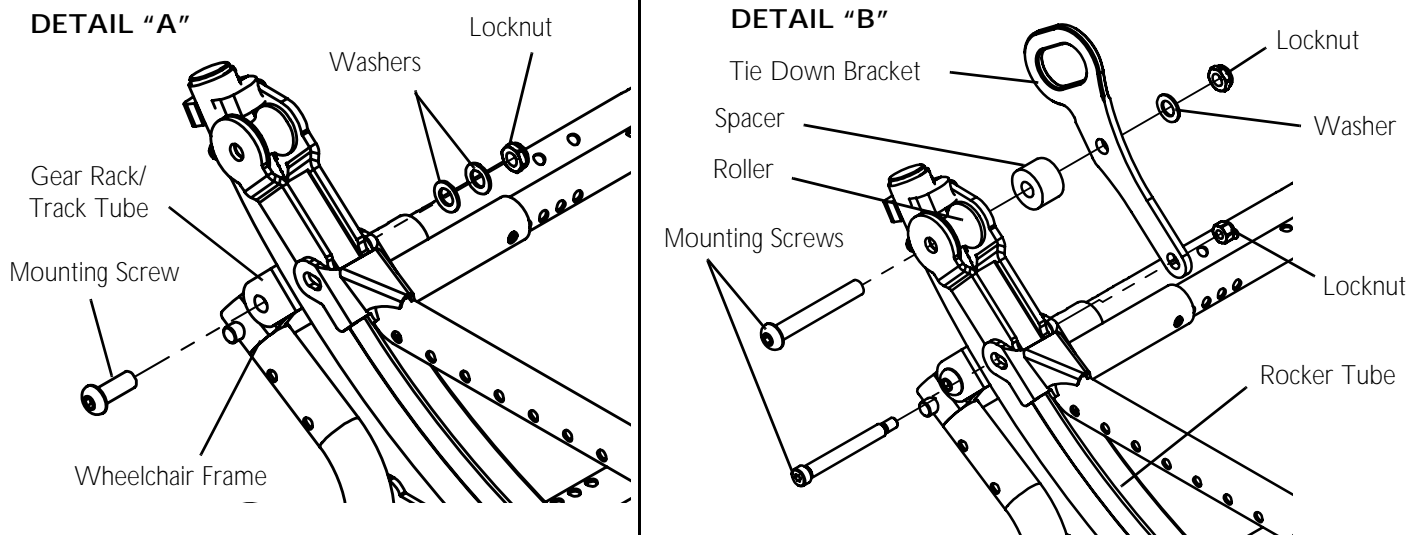


**FIGURE 16.2** Install New Transport Brackets - 12-16 Inch Deep Seat Frames.

### 15-19 Inch Deep and 18-22 Inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 16.3 on page 142.*

1. Secure the gear rack/track tube to the wheelchair frame with mounting screw, washers and locknut. Tighten securely.
2. Secure the roller and the tie down bracket to the rocker tube with mounting screw, spacer, washer, and locknut. Tighten securely.
3. Secure the tie down bracket to the rocker tube and seat frame with mounting screw and locknut. Tighten securely.
4. Repeat STEPS 1-3 for remaining transport bracket.



**FIGURE 16.3** Install New Transport Brackets - 15-19 Inch Deep and 18-22 Inch Deep Seat Frames

## Installing Transport Brackets on Solara 3G (TRBKTS)

This kit (TRBKTS) includes four wheelchair transport brackets. TRBKTS has not been crash-tested in accordance with WC 19. Invacare recommends that these transport brackets be used only to secure an unoccupied wheelchair during transport.

As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type. It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation system.

### Remove Existing Hardware

*NOTE: For this procedure, refer to FIGURE 16.1 on page 141.*

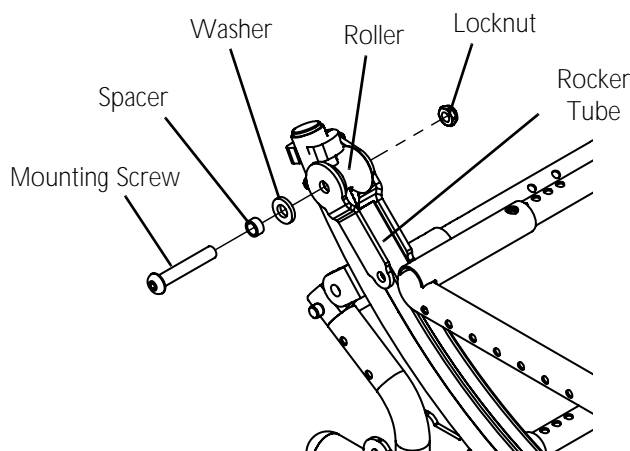
#### 12-16 Inch Deep Seat Frames

1. Remove the mounting screw, washer, spacer and locknut that secures the roller to the rocker tube.
2. Repeat STEPS 1 for remaining side of wheelchair.

#### 15-19 inch deep and 18-22 inch deep seat frames

1. Remove the mounting screw, washer, spacer and locknut that secures the roller to the rocker tube (Detail "A").
2. Remove the mounting screw and locknut that secures the seat frame to the rocker tube (Detail "B").
3. Repeat STEPS 1-2 for opposite side of the wheelchair.

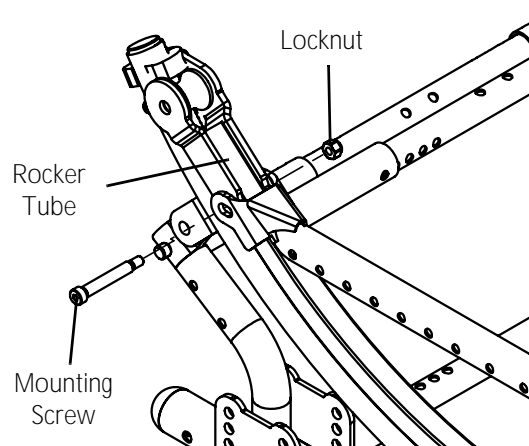
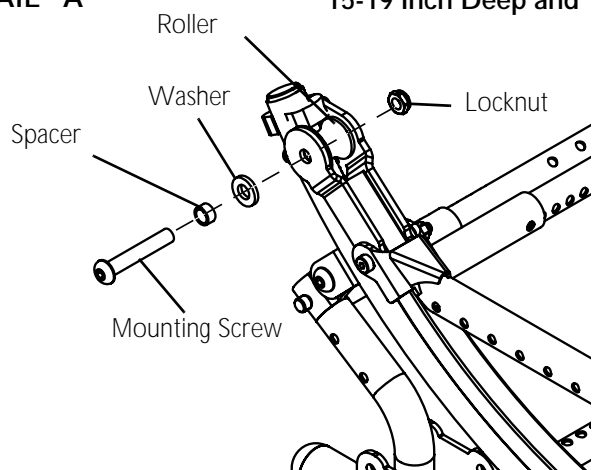
#### 12-16 inch Deep Seat Frames



#### DETAIL "A"

#### 15-19 inch Deep and 18 - 22 inch Deep Seat Frames

#### DETAIL "B"



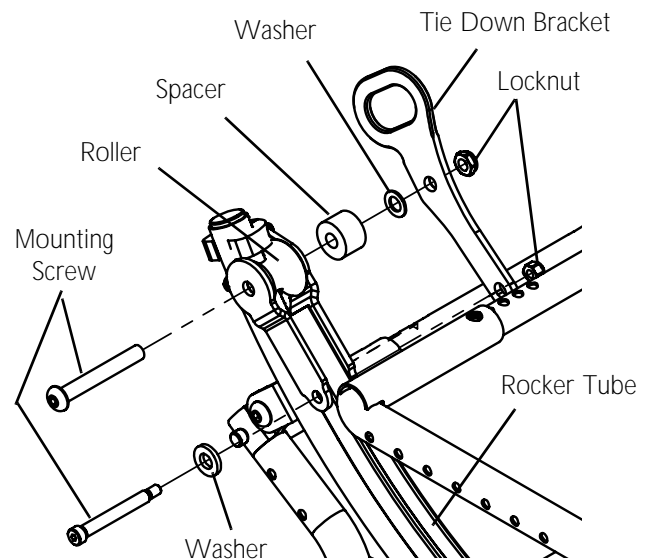
**FIGURE 16.4** Remove Existing Hardware

## Install Transport Brackets

### 12-16 Inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 16.5.*

1. Secure the tie down bracket to the rocker tube with mounting screw, spacer, washer, and locknut. Tighten securely.
2. Secure the tie down bracket to the rocker tube with mounting screw, washer, and locknut. Tighten securely.
3. Repeat STEPS 1-3 for remaining tie down bracket.

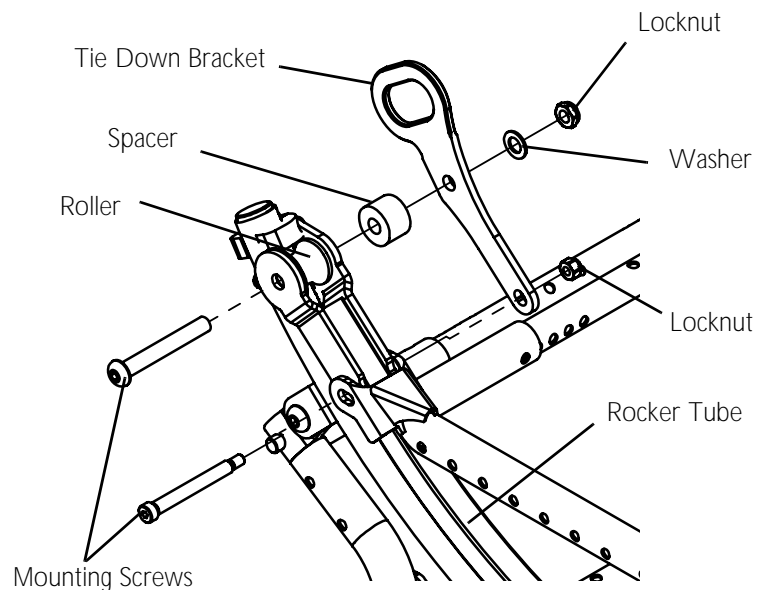


**FIGURE 16.5** Install New Transport Brackets - 12-16 Inch Deep Seat Frames.

### 15-19 Inch Deep and 18-22 Inch Deep Seat Frames

*NOTE: For this procedure, refer to FIGURE 16.3.*

1. Secure the roller and the tie down bracket to the rocker tube with mounting screw, spacer, washer, and locknut. Tighten securely.
2. Secure the tie down bracket to the rocker tube and seat frame with mounting screw and locknut. Tighten securely.
3. Repeat STEPS 1-3 for remaining tie down bracket.



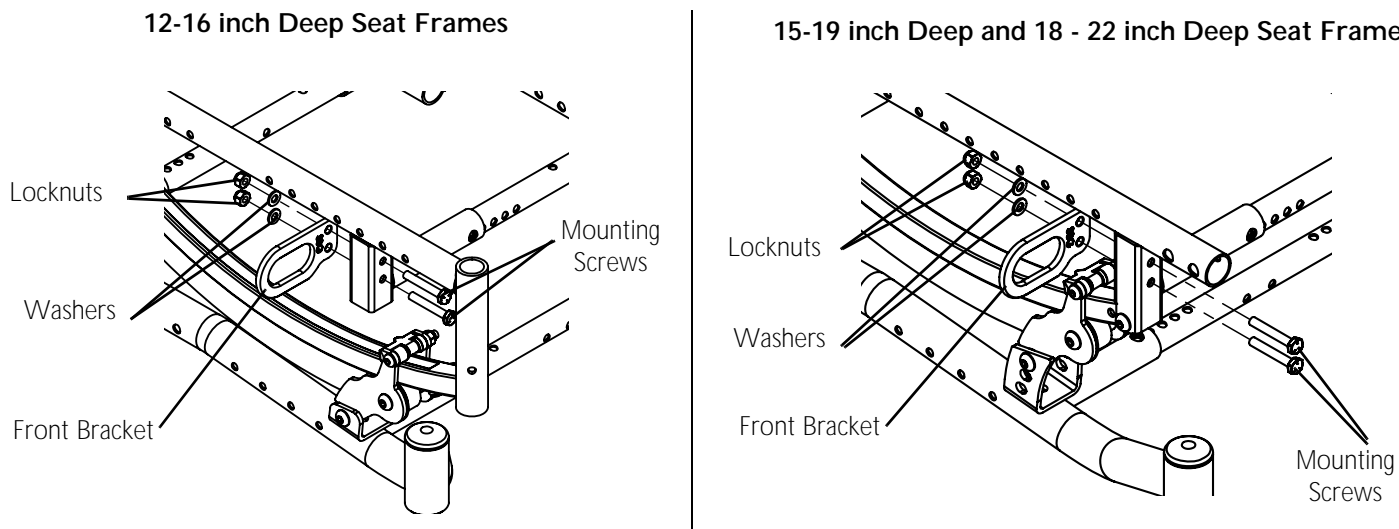
**FIGURE 16.6** Install New Transport Brackets - 15-19 Inch Deep and 18-22 Inch Deep Seat Frames



## Install Front Brackets

*NOTE: For this procedure, refer to FIGURE 16.7.*

1. Secure the front bracket to the seat rail vertical tube with two mounting screws, washers, and locknuts. Tighten securely
2. Repeat STEP 1 for opposite side of wheelchair.

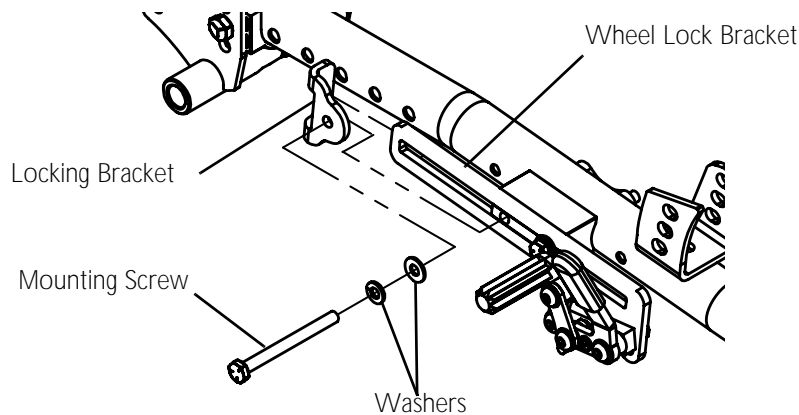


**FIGURE 16.7** Install Front Brackets

## Install Locking Bracket on Wheel Lock

*NOTE: For this procedure, refer to FIGURE 16.8.*

1. Remove the mounting screw and washers that secure the wheel lock bracket in place.
2. Slide locking bracket on to wheel lock.
3. Secure locking bracket in place with existing mounting screw and washers. Tighten securely.
4. Repeat STEPS 1-3 for remaining wheel lock.



**FIGURE 16.8** Install Locking Bracket on Wheel Lock

## SECTION 17—INSTALLING LOW SHEAR RECLINER

## Remove Existing Recliner Back from Solara Wheelchair

## Remove Seating System/Back Upholstery

1. Perform one of the following:
  - A. Remove the seating system from the wheelchair. Refer to the seating system owner's manual.
  - B. Remove the back upholstery from the wheelchair. Refer to the Solara owner's manual.

## Remove the Stroller Handle

1. Remove the mounting screw that secures the trigger release lever to the stroller handle.
 

*NOTE: There may be a tie wrap that secures the gas cylinder cable to the stroller handle.*
2. If so equipped, cut the tie wrap that secures the gas cylinder cable to the stroller handle.
3. Remove the two mounting screws and locknuts that secure stroller handle to the existing back canes.
4. Remove the stroller handle and set aside.

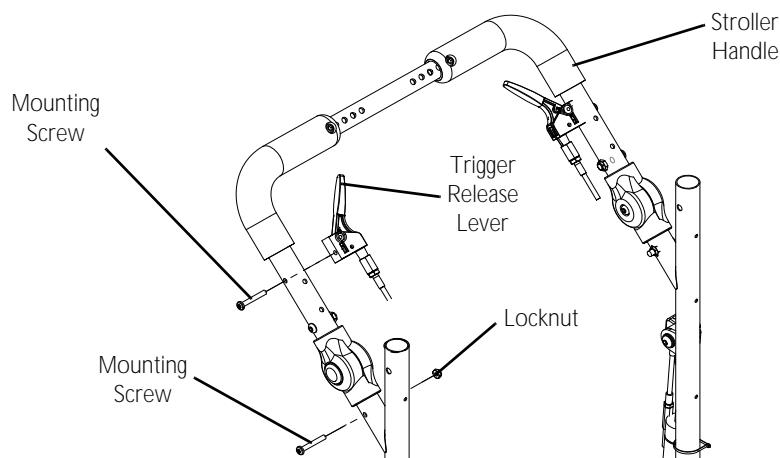


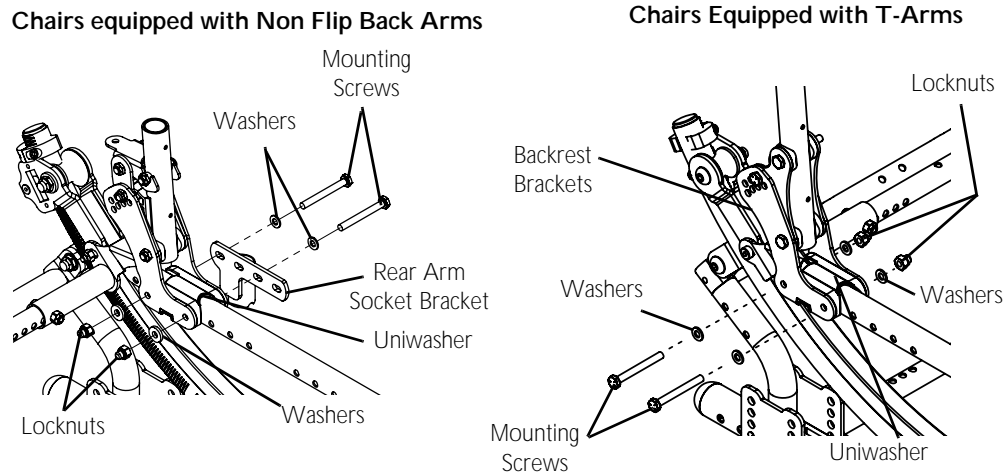
FIGURE 17.1 Remove the Stroller Handle

## Remove Existing Recliner Back Canes

*NOTE: For this procedure, refer to FIGURE 17.2 on page 147.*

1. Perform one of the following:
  - A. Chairs equipped with T- arms - Remove the two mounting screws, four washers, and locknuts that secure the backrest brackets and uniwasher to the seat rail. Repeat for remaining back cane.
  - B. Chairs equipped with non flip back arms - Remove the two mounting screws, four washers, rear arm socket bracket, and locknuts that secure the backrest brackets and uniwasher to the seat rail. Repeat for remaining back cane.
2. Remove the back assembly from the wheelchair frame.
 

*NOTE: Before removing the uniwashers, note the position of the uniwashers on the seat rails to ensure obtaining correct seat depth when installing the low shear recliner back.*
3. Remove the existing uniwashers from the seat rails.



**FIGURE 17.2** Remove Existing Recliner Back from Solara Wheelchair

### 17.1 Installing the Low Shear Recliner on to Solara Wheelchair

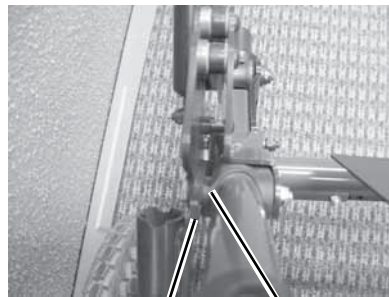
#### Install Low Shear Recliner Back Cane

*NOTE: For this procedure, refer to FIGURE 17.3 on page 147 and FIGURE 17.4 on page 148.*

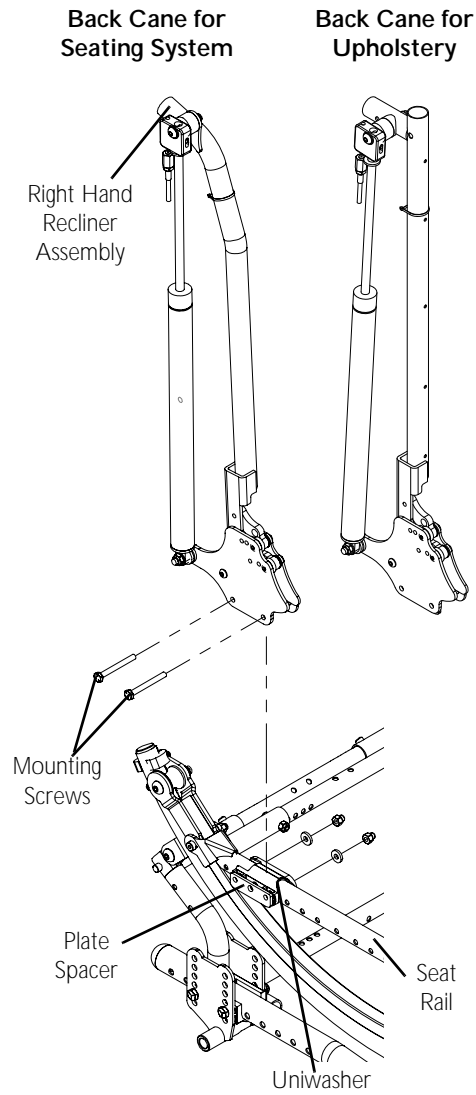
1. Install the uniwasher on the seat rail in the position previously noted (FIGURE 17.4).

*NOTE: Plate spacer is used with chairs equipped with T-arms and chairs with no arms (FIGURE 17.4). Use rear arm socket bracket in place of plate spacer when chair is equipped with non flip back arms (FIGURE 17.3).*

2. Position plate spacer on outside of uniwasher (FIGURE 17.4).
3. Install recliner assembly onto uniwasher and plate spacer (FIGURE 17.4).
4. Secure recliner assembly to plate spacer, uniwasher, and seat rail with two mounting screws, washers, and locknuts (FIGURE 17.4).
5. Repeat STEPS 1-4 for remaining recliner assembly.



**FIGURE 17.3** Rear Arm Socket Bracket



*NOTE:* Only right side of wheelchair is shown for clarity.

**FIGURE 17.4** Install Low Shear Recliner Back Cane

### Installing Stroller Handle

1. Secure the existing stroller handle to the back canes with two mounting screws and locknuts. Tighten securely.
2. Secure the trigger release levers to the stroller handle with mounting screw and locknut inside the housing of the trigger release lever.

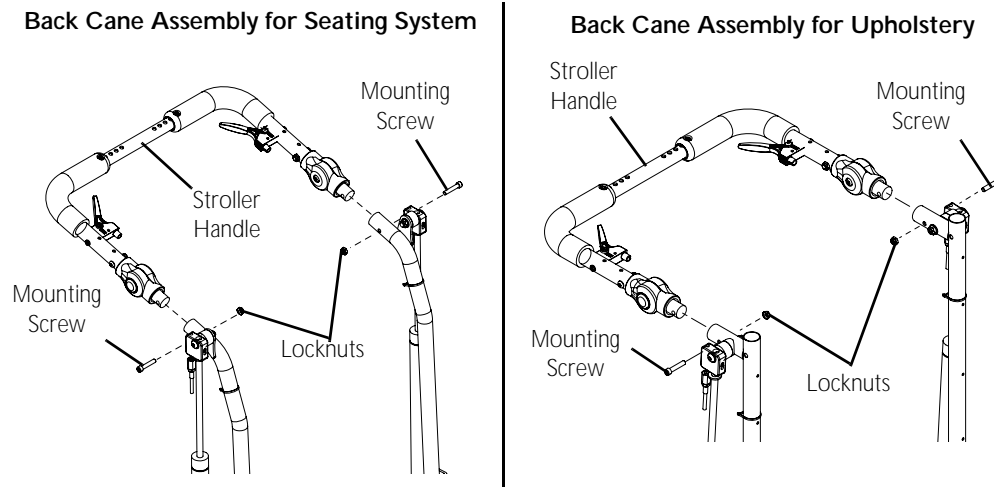


FIGURE 17.5 Installing Stroller Handle

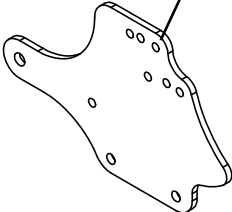
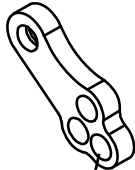
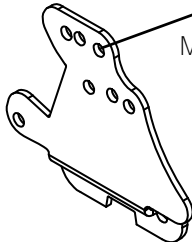
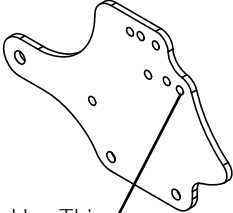
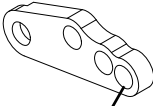
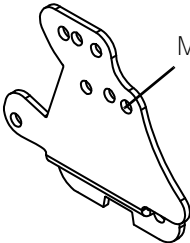
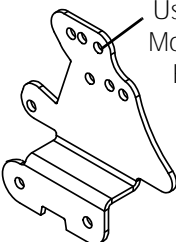
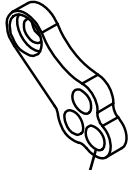
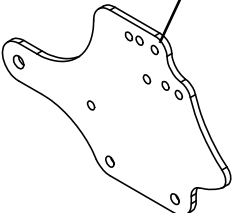
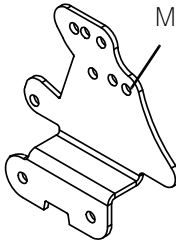
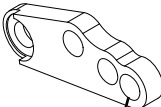
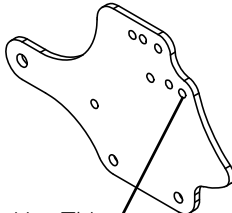
### Install Seating System/Back Upholstery

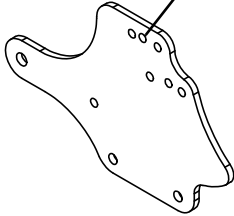
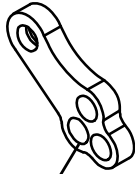
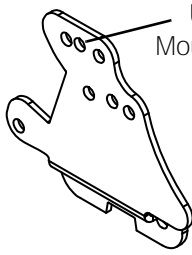
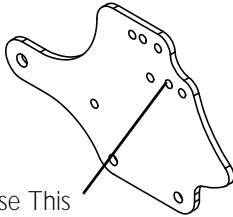
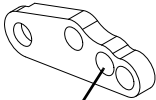
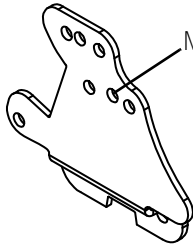
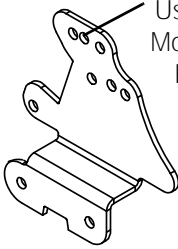
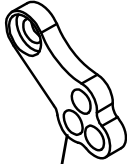
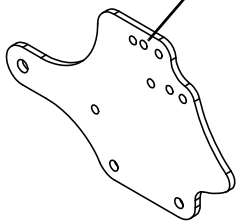
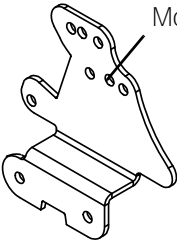
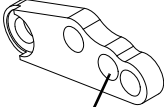
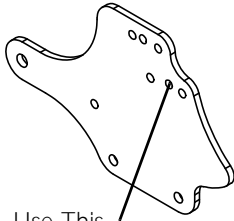
1. Perform one of the following:
  - A. Install the seating system from the wheelchair. Refer to the seating system owner's manual.
  - B. Install the back upholstery from the wheelchair. Refer to the Solara owner's manual.

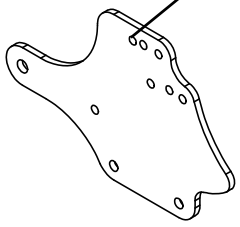

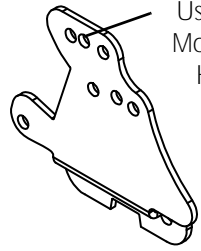
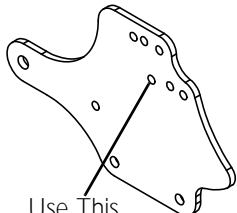
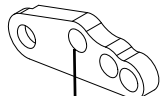
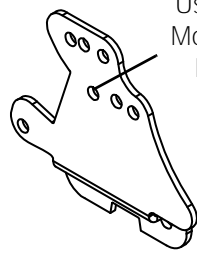
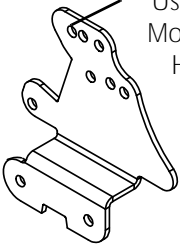
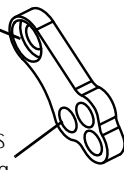
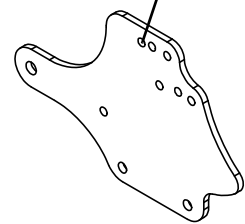
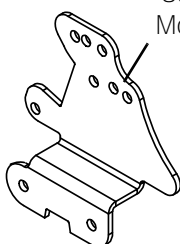
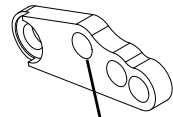
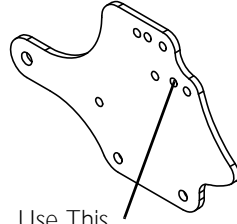
### Low Shear Recline Identification

1. Review the following component charts, illustrations and *FIGURE 17.6 on page 153*, *FIGURE 17.7 on page 154*, and *FIGURE 17.8 on page 155* to ensure correct orientation and mounting holes are used to obtain the desired low shear recline.

SECTION 17—INSTALLING LOW SHEAR RECLINER

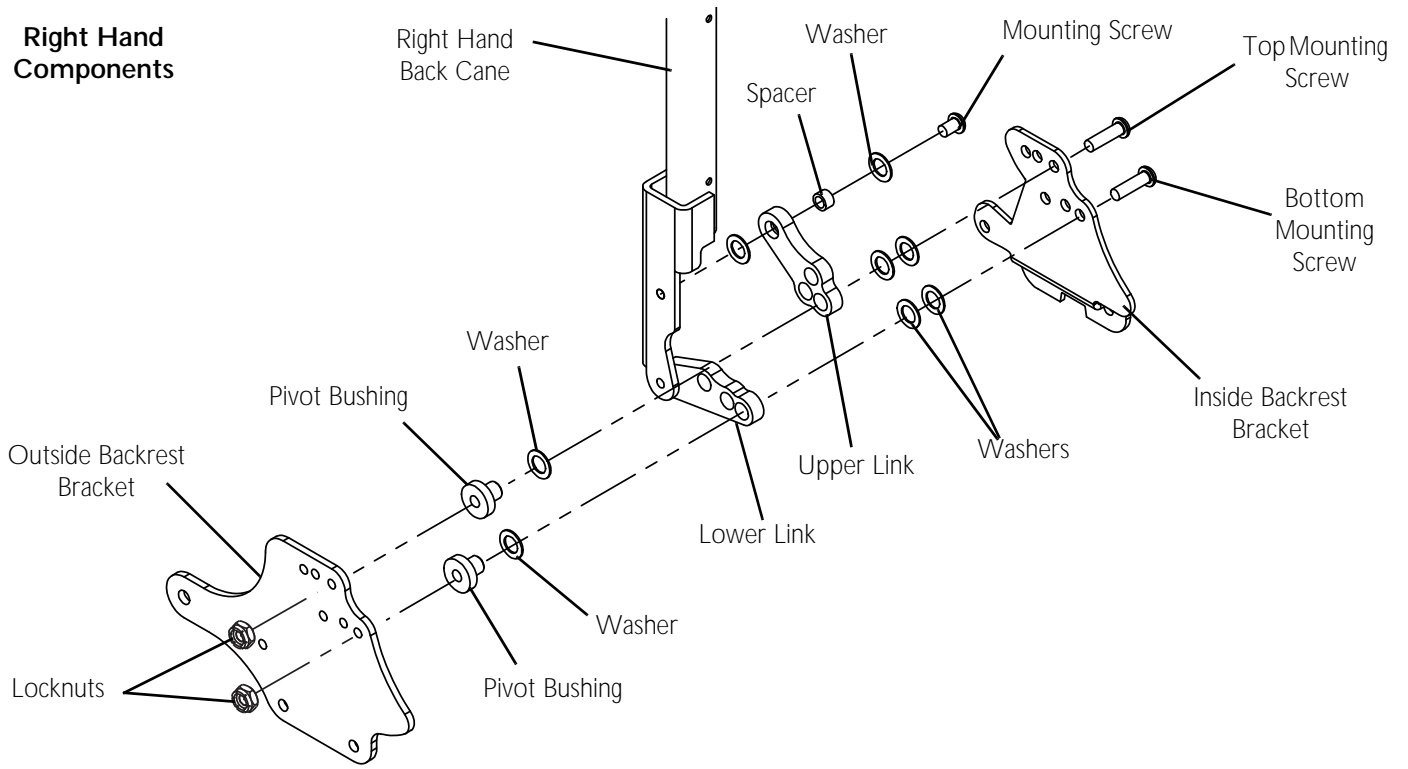
CORRECT MOUNTING HOLES TO USE FOR 3.8 INCH SHEAR			
Right Hand Components			
	Outside Backrest Bracket	Upper Link	Inside Backrest Bracket
<b>Top Mounting Screw</b>	<p>Use This Mounting Hole</p> 	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<b>Bottom Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<p><i>NOTE: Refer to FIGURE 17.6 on page 153 for correct hardware orientation.</i></p> <p><i>NOTE: Right and left hand side is determined from the seated position in the wheelchair.</i></p>			
Left Hand Components			
	Inside Backrest Bracket	Upper Link	Outside Backrest Bracket
<b>Top Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<b>Bottom Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<p><i>NOTE: Refer to FIGURE 17.6 on page 153 for correct hardware orientation.</i></p> <p><i>NOTE: Right and left hand side is determined from the seated position in the wheelchair.</i></p>			

CORRECT MOUNTING HOLES TO USE FOR 3 INCH SHEAR			
Right Hand Components			
	Outside Backrest Bracket	Upper Link	Inside Backrest Bracket
<b>Top Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<b>Bottom Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<p><i>NOTE: Refer to FIGURE 17.7 on page 154 for correct hardware orientation.</i></p> <p><i>NOTE: Right and left hand side is determined from the seated position in the wheelchair.</i></p>			
Left Hand Components			
	Inside Backrest Bracket	Upper Link	Outside Backrest Bracket
<b>Top Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<b>Bottom Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<p><i>NOTE: Refer to FIGURE 17.7 on page 154 for correct hardware orientation.</i></p> <p><i>NOTE: Right and left hand side is determined from the seated position in the wheelchair.</i></p>			

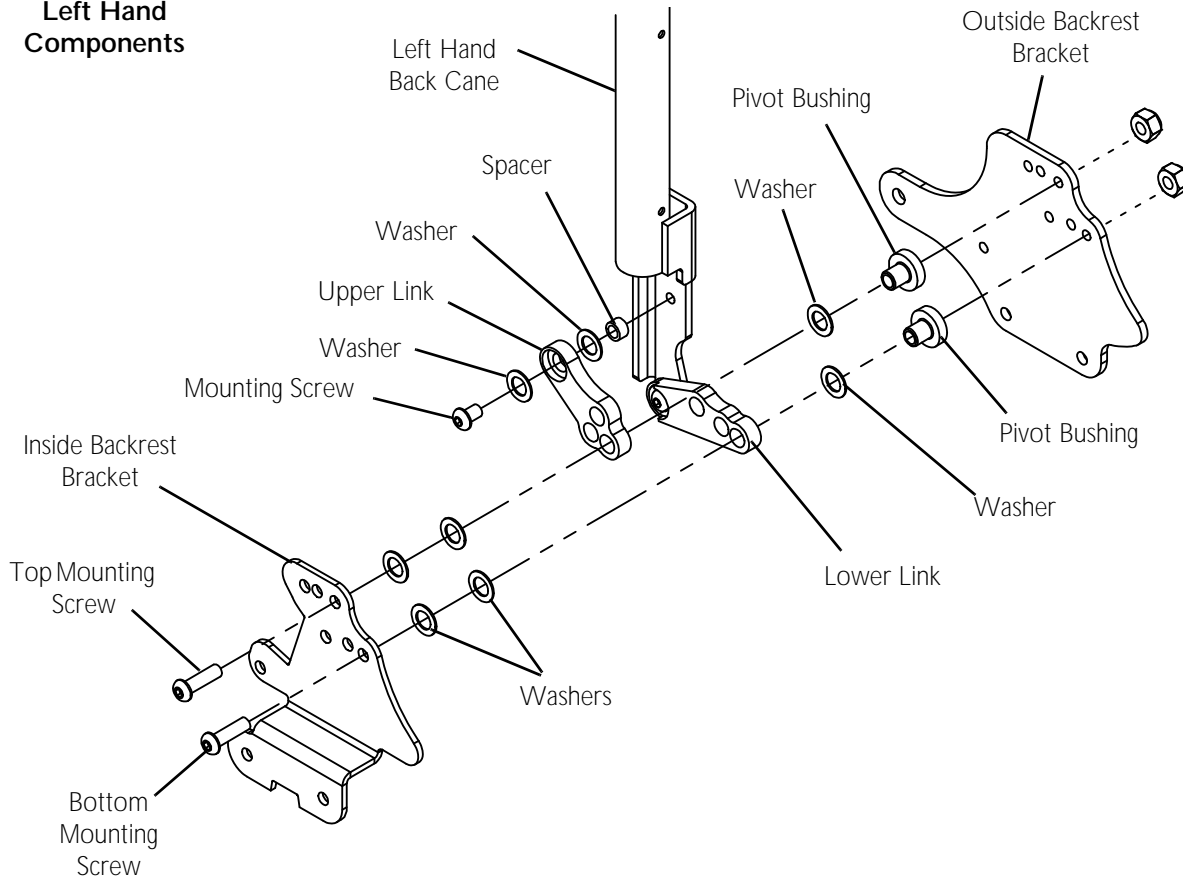
CORRECT MOUNTING HOLES TO USE FOR 2 INCH SHEAR			
Right Hand Components			
	Outside Backrest Bracket	Upper Link	Inside Backrest Bracket
<b>Top Mounting Screw</b>	<p>Use This Mounting Hole</p> 	<p>Recess facing inside of wheelchair</p>  <p>Use This Mounting Hole</p> <p><i>NOTE: The upper link that is used on the left hand side for 3.8 inch and 3 inch shear will be used on the right hand side for 2 inch shear. Ensure the recessed area is facing toward the inside of the chair.</i></p>	<p>Use This Mounting Hole</p> 
	Outside Backrest Bracket	Bottom Link	Inside Backrest Bracket
<b>Bottom Mounting Screw</b>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<p><i>NOTE: Refer to FIGURE 17.8 on page 155 for correct hardware orientation.</i></p> <p><i>NOTE: Right and left hand side is determined from the seated position in the wheelchair.</i></p>			
Left Hand Components			
	Inside Backrest Bracket	Upper Link	Outside Backrest Bracket
<b>Top Mounting Screw</b>	<p>Use This Mounting Hole</p> 	<p>Recess facing inside of wheelchair</p>  <p>Use This Mounting Hole</p> <p><i>NOTE: The upper link that is used on the right hand side for 3.8 inch and 3 inch shear will be used on the left hand side for 2 inch shear. Ensure the recessed area is facing toward the inside of the chair.</i></p>	<p>Use This Mounting Hole</p> 
	Inside Backrest Bracket	Lower Link	Outside Backrest Bracket
<b>Bottom Mounting Screw</b>	<p>Use This Mounting Hole</p> 	 <p>Use This Mounting Hole</p>	 <p>Use This Mounting Hole</p>
<p><i>NOTE: Refer to FIGURE 17.8 on page 155 for correct hardware orientation.</i></p> <p><i>NOTE: Right and left hand side is determined from the seated position in the wheelchair.</i></p>			



**Right Hand Components**



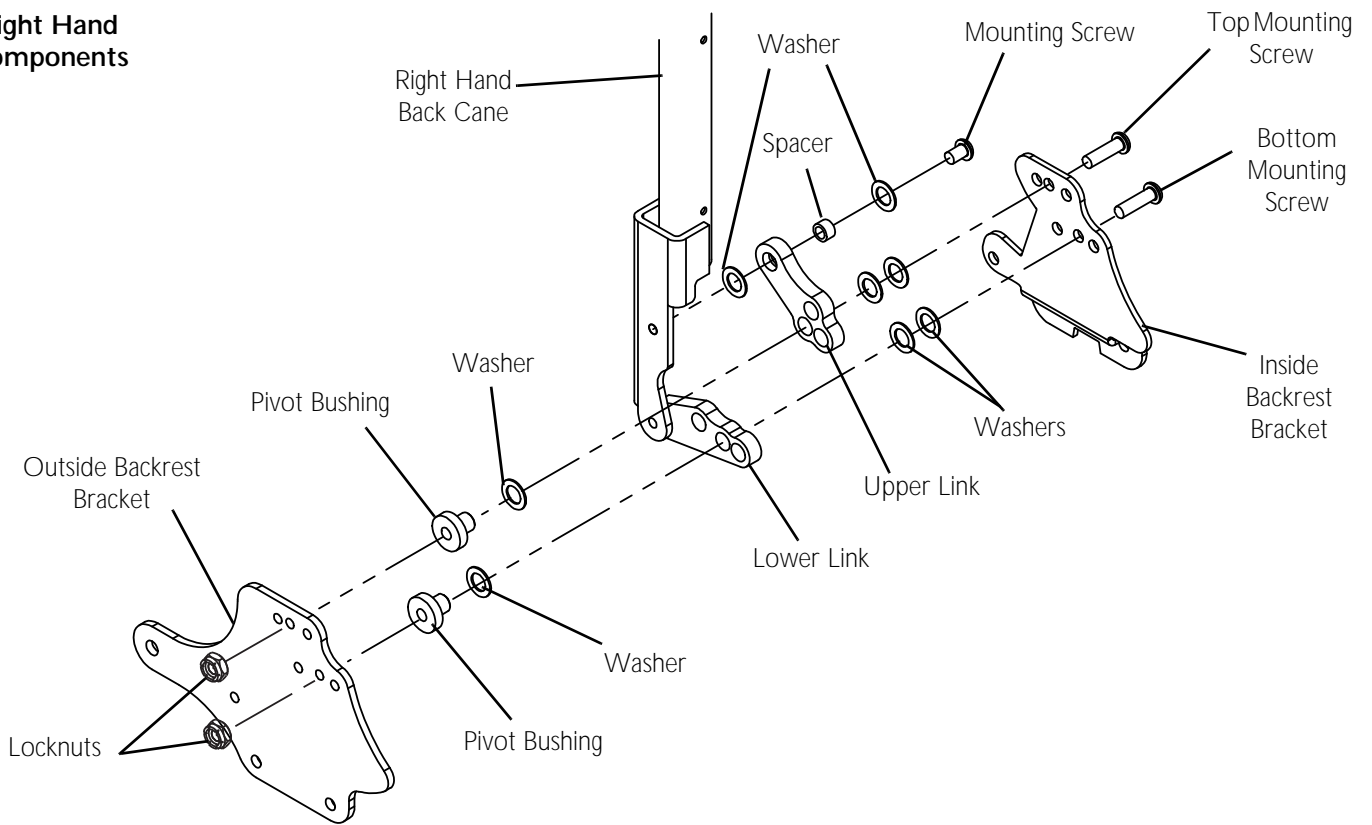
**Left Hand Components**



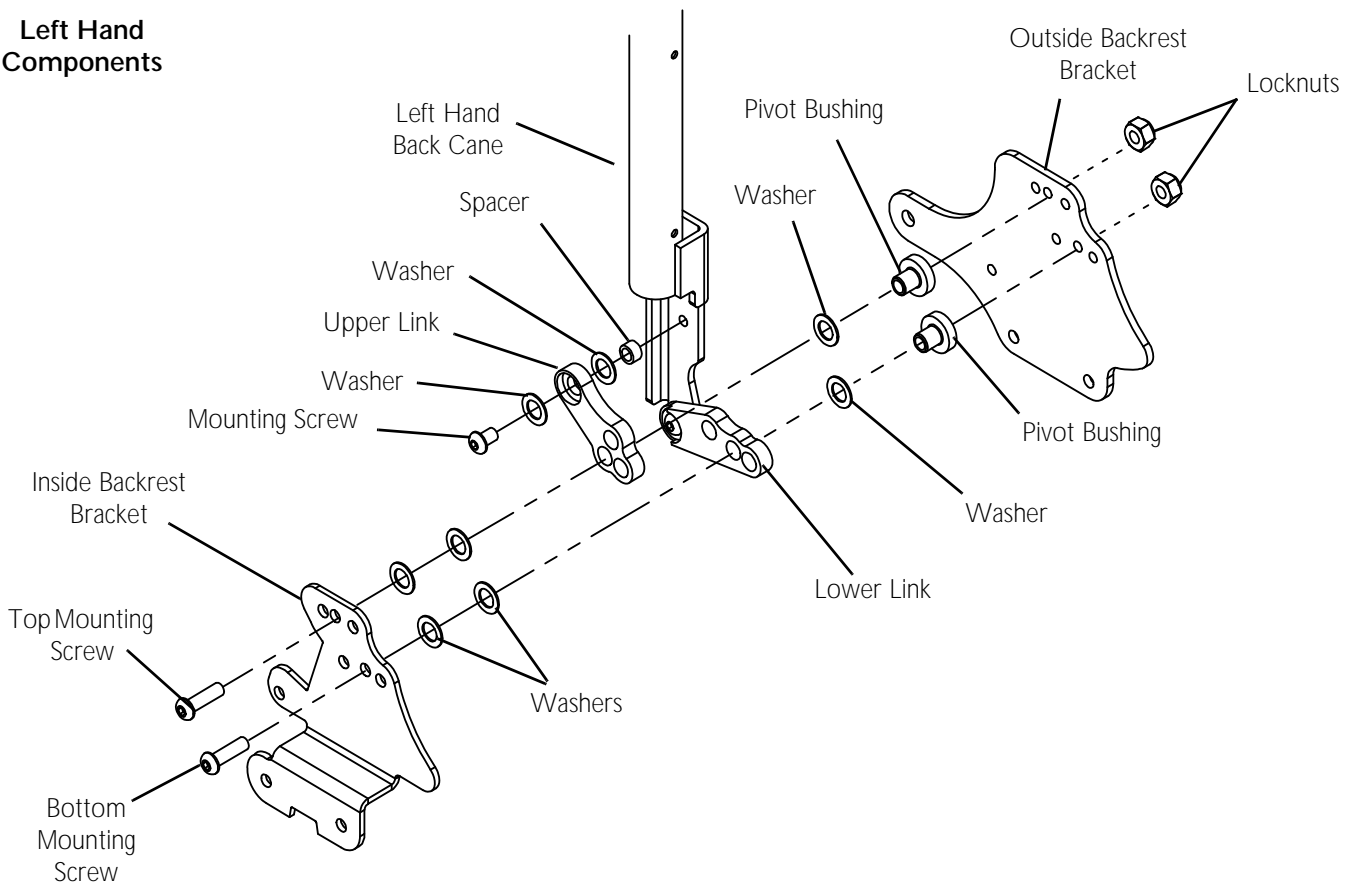
**FIGURE 17.6** Correct Assembly for 3.8 Inch Low Shear Recline

SECTION 17—INSTALLING LOW SHEAR RECLINER

**Right Hand Components**

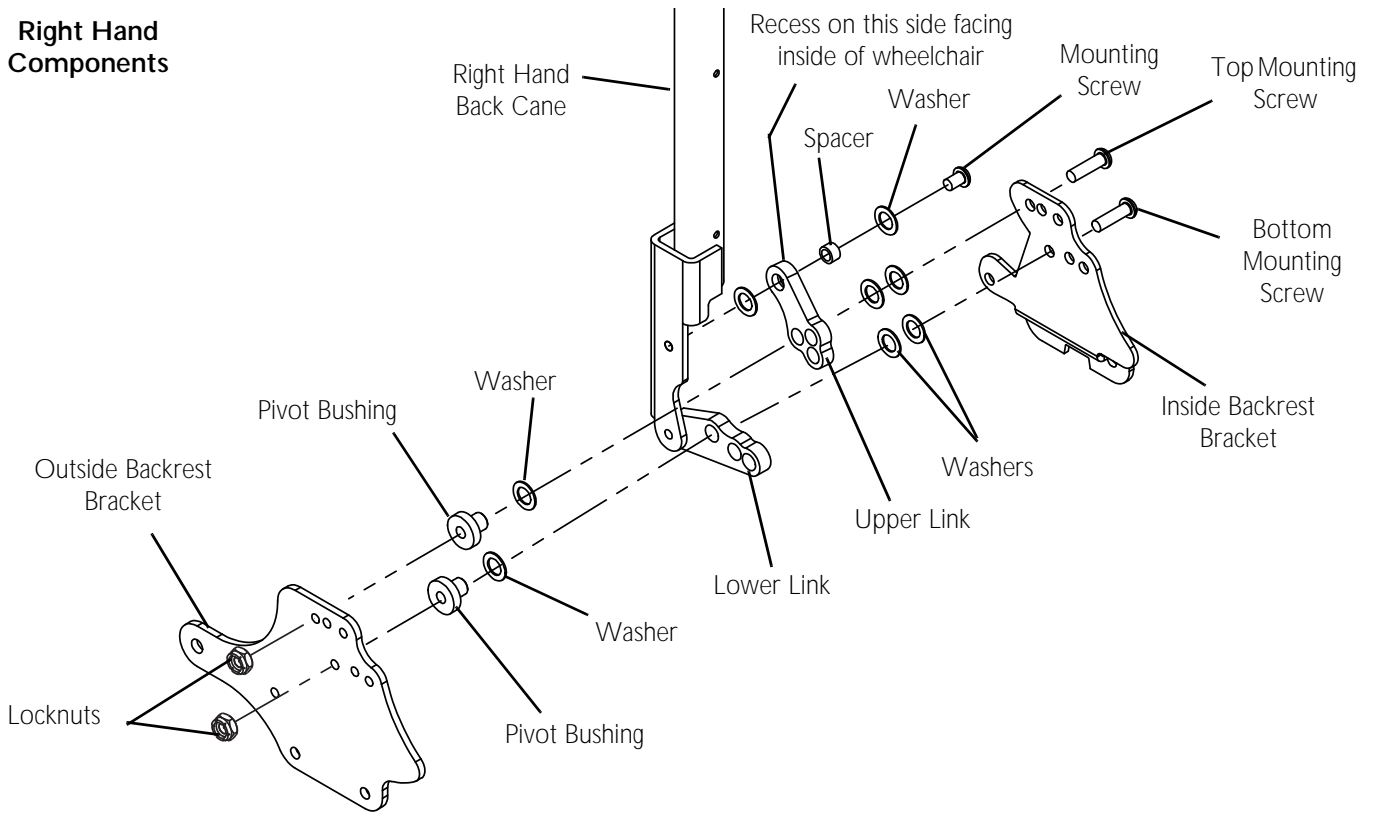


**Left Hand Components**

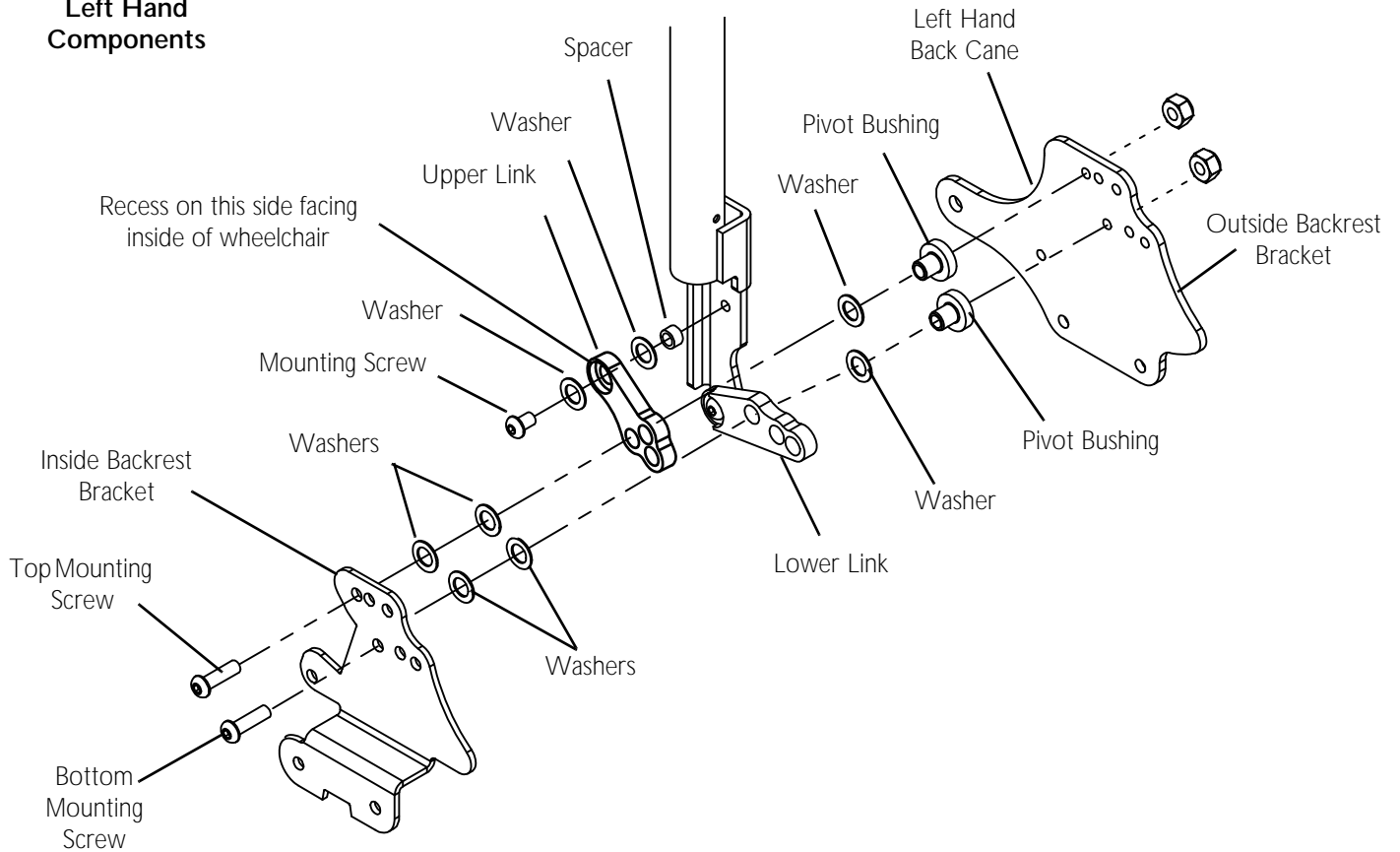


**FIGURE 17.7** Correct Assembly for 3 Inch Low Shear Recline

**Right Hand Components**



**Left Hand Components**



**FIGURE 17.8** Correct Assembly for 2 inch Low Shear Recline

## Changing the Low Shear Recline

*NOTE: For this procedure refer to the above component charts and FIGURE 17.6 on page 153, FIGURE 17.7 on page 154, and FIGURE 17.8 on page 155.*

### Removing

1. Review Low Shear Recline Identification on page 149 before adjusting low shear recline.
2. Remove the mounting screws, washers, and pivot bushings that secure the upper/ lower links to the inside/outside backrest brackets.
3. If necessary, remove the mounting screw, washers, and spacer that secures the upper link to the back cane mounting bracket.

### Installing

1. Review Low Shear Recline Identification on page 149 before adjusting low shear recline.
2. If necessary, secure the upper link to the back cane mounting bracket in the orientation determined in STEP 1. Tighten securely
3. Secure the upper/ lower links to the inside/outside backrest brackets with mounting screws, washers, and pivot bushings. Tighten securely.

# NOTES

# NOTES

# NOTES

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# LIMITED WARRANTY

For warranty information, please refer to the original owner's manual which came with this product, or contact Invacare for more information.



*Yes, you can.*

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