

9000 Series

9000 SL

9000 XT

9000 XDT

9000XT Recliner

DEALER: Keep this manual. The procedures in this manual must be performed by a qualified technician only.

For more information regarding
Invacare products, parts, and services,
please visit www.invacare.com



Yes, you can.®

⚠ WARNING

THE PROCEDURES IN THIS SERVICE MANUAL MUST BE PERFORMED BY A QUALIFIED TECHNICIAN.

DO NOT SERVICE OR OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING (1) THE OWNER'S OPERATOR AND MAINTENANCE MANUAL AND (2) THE SERVICE MANUAL. IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS AND INSTRUCTIONS, CONTACT INVACARE TECHNICAL SUPPORT BEFORE ATTEMPTING TO SERVICE OR OPERATE THIS EQUIPMENT. OTHERWISE, INJURY OR DAMAGE MAY RESULT.

REFERENCE DOCUMENTS

Refer to the table below for part numbers of additional documents which are referenced in this manual.

| MANUAL | PART NUMBER |
|---|-------------|
| 9000 Series Owner's Operator and Maintenance Manual | 1056953 |

NOTE: Updated versions of this manual are available on 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 following table 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. |

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

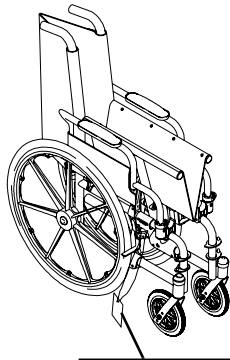
Wheelchair users should **NOT** be transported in vehicles of any kind while in wheelchairs. As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type.

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.

SEAT POSITIONING STRAP

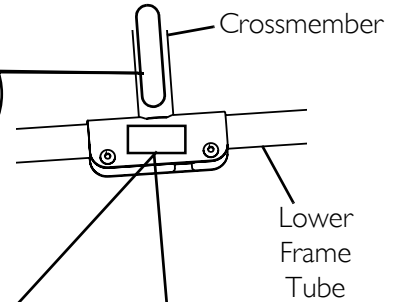
Regarding seat positioning straps, it is the obligation of the **DME** dealer, therapists and other healthcare professionals to determine if a seat positioning strap is required to ensure the safe operation of this equipment by the user. Serious injury can occur in the event of a fall from a wheelchair.

LABEL LOCATION



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'À TITRE D'INFORMATION ET N'A PAS ÉTÉ AFFICHÉE ICI POUR DES RAISONS DE RESPONSABILITÉ LÉGALE.



IMPORTANT NOTICE

The wheel locks on this wheelchair have been pre-set at the factory to comply with the Veterans Administration functional Standard 8320.01 of the Federal Register, paragraph 3.2.4.5.3. If these wheel locks do not meet your needs, follow instructions below.

CAUTION

Any wheel lock adjustments should embed wheel lock shoe at least 1/8" into tire when locked (3/16" on pneumatic tires).

INSTRUCTIONS FOR WHEEL LOCK ADJUSTMENTS

- Loosen wheel lock mounting fastener, which runs through mounting bracket and frame.
- Slide clamp toward rear wheel until wheel lock shoe is embedded into tire material at least 1/8" when handle is engaged to the lock position (3/16" for pneumatic tires).
- Tighten mounting fastener to secure mounting bracket in desired location and recheck lock shoe embedding.
- Inspect for correct locking action BEFORE actual use.

00078X021-0394

WEIGHT CAPACITY
250 LBS. (114 kgs.)
 REFER TO OWNER'S MANUAL

P/N 1111013

WEIGHT CAPACITY
350 LBS. (159 kgs.)
 REFER TO OWNER'S MANUAL

P/N 1111017

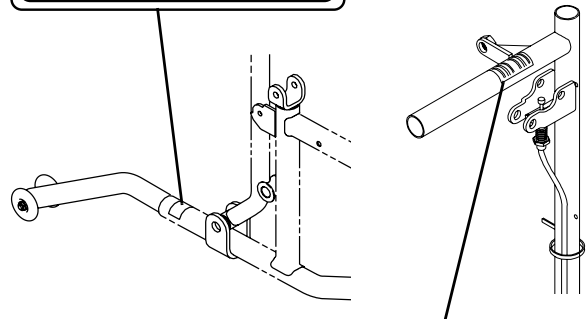
9000 XDT Only

9000 XT Recliner Models Only

WARNING

DO NOT OPERATE WITHOUT THE ANTI-TIP TUBES

REV. 5/98 INSTALLED. P/N 60106X144



CAUTION

DO NOT recline without occupant. When the chair is not occupied the back will raise abruptly. Keep clear of the chair back when raising or lowering to avoid injury.

1023096

NOTE: On all adjustable anti-tippers

WARNING

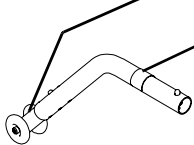
Refer to Owner's Manual for proper anti-tipper setting.

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WARNING

DO NOT OPERATE WITHOUT THE ANTI-TIP TUBES INSTALLED.

REV. 5/98 INSTALLED. P/N 60106X144

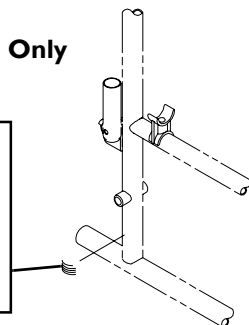


Models with Quick-Release Axles Only

WARNING

DETENT BALLS MUST BE SECURELY SEATED IN RECESSED AREAS OF AXLE BUSHINGS. ENSURE THAT PLUNGER PIN IN HEAD END OF AXLE IS FULLY RELEASED. KEEP DETENT BALLS CLEAN.

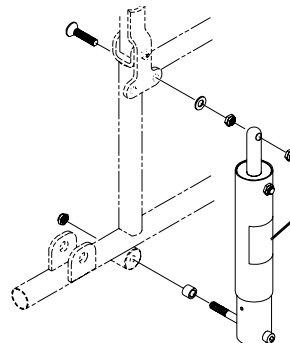
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CAUTION

SERVICE OF SPRING LIFT MECHANISM TO BE PERFORMED BY PROPERLY TRAINED AUTHORIZED SERVICE PERSONNEL ONLY.

1022642



TYPICAL PRODUCT PARAMETERS

| 9000 SL | |
|---|--|
| OVERALL WIDTH | 23 or 25 inches |
| OVERALL DEPTH (WITH RIGGINGS) | 43½ inches |
| SEAT WIDTH | 16, 18 or 20 inches |
| SEAT DEPTH | 16 or 18 inches |
| ** SEAT-TO-FLOOR TALL/ADULT: ADULT/HEMI: SUPER HEMI: | N/A 15½ to 19½ in 1-inch increments N/A |
| BACK STYLE | Sectional* - height adjustable in 1-inch increments Adjustable angle - 85° to 110° in 5° increments |
| BACK HEIGHT | Ranges of 15 to 17 inches or 17 to 19 inches (adjustable in 1-inch increments) |
| ARM STYLES | Swing Back* Space Saver*, Desk* or full length in Fixed* or Adjustable Height Swing Back Removable, Conventional, Adjustable Height (Adjustable back angle style) |
| FRONT RIGGINGS | Swingaway footrests and elevating legrests |
| REAR AXLE | Permanent* and quick-release |
| REAR WHEELS | 20, 22 and 24*-inch composite; Urethane*, pneumatic or pneumatic-flat free insert |
| HANDRIMS | Composite* and aluminum, steel |
| WHEEL LOCKS | Toggle lock -push or pull |
| CASTER SIZE | 6 x 1-inch Urethane, 8 x 1¼-inch* Urethane, 8x1-inch solid rubber, and 8x1¼-inch pneumatic or pneumatic flat-free insert |
| UPHOLSTERY | Black nylon*, black vinyl |
| FRAME COLORS | Chrome* and colors |
| WEIGHT (18 X 16 INCH SEAT) | 33½ lbs |
| SHIPPING WEIGHT (APPROX.) 16 X 16 INCH SEAT FRAME WITH COMPLETE PACKAGE: | 43 lbs |
| WEIGHT LIMIT | 250 lbs (114 kg) |

*NOTE: These options are standard for this model.

**NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼-inch to the measurements listed above. These heights can vary +/- ¼-inch due to tire wear and manufacturing tolerances.

| 9000 XT | |
|--|--|
| OVERALL WIDTH | 21, 22, 23, 25, 27 or 29 inches |
| OVERALL DEPTH (WITH RIGGINGS) | 43½ inches |
| SEAT WIDTH | 14, 15, 16, 18, 20 or 22 inches |
| SEAT DEPTH | 16, 17, or 18 inches |
| ** SEAT-TO-FLOOR TALL/ADULT: ADULT/HEMI: SUPER HEMI: | N/A 15½ to 19½ in 1-inch increments 13½ and 14½ inches |
| BACK STYLE | Height adjustable* - 1-inch increments Adjustable angle - 85° to 110° in 5° increments |
| BACK HEIGHT | Ranges of 15 to 17 inches or 17 to 19 inches (adjustable in 1-inch increments) |
| ARM STYLES | Swing back removable, space saver* or conventional in desk* or full length and in fixed* or adjustable height |
| FRONT RIGGINGS | Swingaway footrests and elevating legrests |
| REAR AXLE | Permanent* and quick-release |
| REAR WHEELS | 20, 22 and 24*-inch composite; Urethane*, pneumatic or pneumatic-flat free insert |
| HANDRIMS | Composite*, aluminum, steel and plastic coated |
| WHEEL LOCKS | Toggle lock -push or pull |
| CASTER SIZE | 6 x 1-inch Urethane, 8 x 1¼-inch* Urethane, 8x1-inch solid rubber, and 8x1¼-inch pneumatic or pneumatic flat-free insert, 8x1¾-inch semi pneumatic |
| UPHOLSTERY | Black nylon*, black sail cloth, heavy vinyl |
| FRAME COLORS | Chrome* and colors |
| WEIGHT (18 X 16 INCH SEAT) | 31 lbs |
| SHIPPING WEIGHT (APPROX.) 16 X 16 INCH SEAT FRAME WITH COMPLETE PACKAGE | 41½ lbs |
| WEIGHT LIMIT | 250 lbs (114 kg) |

*NOTE: These options are standard for this model.

**NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼-inch to the measurements listed above. These heights can vary +/- ¼-inch due to tire wear and manufacturing tolerances.

| 9000 XT RECLINER | |
|---|---|
| OVERALL WIDTH | 23, 25, 27, 28, 29 or 31 inches |
| OVERALL DEPTH (WITH RIGGINGS) | 46 inches |
| SEAT WIDTH | 14, 16, 18, 19, 20 or 22 inches |
| SEAT DEPTH | 16, 17, or 18 inches |
| SEAT-TO-FLOOR** TALL/ADULT: ADULT/HEMI: SUPER HEMI: | 17½ to 19½ inches in 1-inch increments N/A N/A |
| BACK STYLE | Reclining |
| BACK HEIGHT | 23 or 24 inches |
| ARM STYLES | Conventional Desk* or full length and in fixed* or adjustable height |
| FRONT RIGGINGS | Swingaway footrests and elevating legrests |
| REAR AXLE | Permanent |
| REAR WHEELS | 20, 22 and 24*-inch composite; Urethane*, pneumatic or pneumatic-flat free insert |
| HANDRIMS | Composite*, aluminum, steel and plastic coated |
| WHEEL LOCKS | Toggle lock - push or pull |
| CASTER SIZE | 8 x 1¼-inch* Urethane, 8x1-inch solid rubber, and 8x1¼-inch pneumatic or pneumatic flat-free insert, 8x1¾-inch semi pneumatic |
| UPHOLSTERY | Heavy vinyl, light vinyl, nylon, sail cloth |
| FRAME COLORS | Chrome and colors |
| WEIGHT | 50½ lbs |
| SHIPPING WEIGHT (APPROX.) | 60½ lbs 18x17-inch seat frame with complete package |
| WEIGHT LIMIT | 250 lbs (114 kg) |

*NOTE: These options are standard for this model.

**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 ¼-inch from the measurements listed above. All heights are measured with properly inflated new tires. These heights can vary ± ¼-inch due to tire wear.

| 9000 XDT | |
|---|---|
| OVERALL WIDTH | 23, 25, 27 or 29 inches |
| OVERALL DEPTH (WITH RIGGINGS) | 45½ inches |
| SEAT WIDTH | 16, 18, 20 or 22 inches |
| SEAT DEPTH | 16, 17, 18, 19 and 20 inches |
| SEAT-TO-FLOOR** TALL/ADULT: ADULT/HEMI: SUPER HEMI: | 17½, 19½ and 21½ inches N/A N/A |
| BACK STYLE | Height adjustable - 1-inch increments |
| BACK HEIGHT | Ranges of 15 to 17 inches or 17 to 19 inches (adjustable in 1-inch increments) |
| ARM STYLES | Swing back or removable, space saver* or conventional, desk* or full length and in fixed* or adjustable height |
| FRONT RIGGINGS | Swingaway footrests and elevating legrests |
| REAR AXLE | Permanent |
| REAR WHEELS | 24*-inch composite, urethane*, pneumatic or pneumatic-flat free insert |
| HANDRIMS | Steel*, aluminum and plastic coated |
| WHEEL LOCKS | Toggle lock - push or pull |
| CASTER SIZE | 8 x 1¼-inch* Urethane, 8x1-inch solid rubber, and 8x1¼-inch pneumatic or pneumatic flat-free insert, 8x1¾-inch semi pneumatic |
| UPHOLSTERY | Black nylon, black sail cloth, heavy vinyl |
| FRAME COLORS | Chrome and colors |
| WEIGHT | 36½ lbs |
| SHIPPING WEIGHT (APPROX.) | 46½ lbs 16x16-inch seat frame with complete package |
| WEIGHT LIMIT | 350 lbs (154 kg) |

*NOTE: These options are standard for this model.

**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 ¼-inch from the measurements listed above. All heights are measured with properly inflated new tires. These heights can vary ± ¼-inch due to tire wear.

SECTION I—GENERAL GUIDELINES

⚠ WARNING

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

Stability - All Models

The seat depth, back height/angle, seat angle, size/position of the front casters, size/position of the rear wheels, anti-tipper model, as well as the user condition directly relate to the stability of the wheelchair. Any change to one (1) or any combination of the ten (10) may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

| <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 | CASTER SIZE | CASTER POSITION | WHEEL SIZE | WHEEL POSITION | USER CONDITION | WHEEL LOCKS | ANTI-TIPPERS |
|--|-------------|------------|------------|----------------|-------------|-----------------|------------|----------------|----------------|-------------|--------------|
| BACK HEIGHT | • | X | X | X | X | X | X | X | N/A | N/A | N/A |
| SEAT DEPTH | X | • | X | X | X | X | X | X | N/A | N/A | N/A |
| BACK ANGLE | X | X | • | X | X | X | X | X | N/A | N/A | N/A |
| SEATING SYSTEM | X | X | X | • | X | X | X | X | X | N/A | N/A |
| CASTER SIZE | X | N/A | X | N/A | • | X | X | X | N/A | X | X |
| CASTER POSITION | X | N/A | X | N/A | X | • | X | X | N/A | X | X |
| WHEEL SIZE | X | N/A | X | N/A | X | X | • | X | N/A | X | X |
| WHEEL POSITION | X | N/A | X | N/A | X | X | X | • | N/A | X | X |
| USER CONDITION | X | X | X | X | X | X | X | X | • | N/A | N/A |
| SEAT HEIGHT | X | N/A | X | X | X | X | X | X | N/A | X | X |

The various seat-to-floor heights require specific settings depending on rear wheel size, rear wheel position, front caster size/position and desired seat-to-floor angle. These adjustments **MUST** be performed by a qualified technician.

Stability - Recliner Models Only

ALWAYS make sure that the wheelchair is stable before using the recliner option.

Ensure the spreader bar is attached and secured before using the 9000XT Recliner.

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

Lift Kit Models only - Both spring lift mechanisms MUST be operational before using the recliner. DO NOT operate the recliner option if only one (1) of the spring lift mechanisms is operational.

Anti-Tippers

Anti-tippers are specific to the different seat-to-floor angles and/or seat-to-floor heights. Refer to the charts in [Installing/Adjusting Anti-tippers](#) on page 80 for correct usage and adjustment. If these requirements cannot be achieved, DO NOT use the wheelchair.

Contact a qualified technician. If changing the seat-to-floor height with or without a change to seat-to-floor angle, the correct anti-tippers MUST be used to maintain a 1½ to 2-inch ground clearance.

Seat-to-floor angle of 0° or 3°: If so equipped, anti-tippers MUST be attached at all times. Inasmuch as the anti-tippers are an option for 0° or 3° on this wheelchair (you may order with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as a safeguard for the wheelchair user.

Seat-to-floor angle of 6°: If changing the seat-to-floor angle to 6°, anti-tippers MUST be installed.

Operating Information

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.

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

When cleaning rear cane or hand grip areas use only a clean towel lightly dampened with cool water. Verify that grips are dry prior to use. Use of soap or ammonia based cleaning solutions will result in the hand grips sliding off the cane assembly. Failure to observe this warning may result in injury to the user or bystanders.

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

Avoid storing or using the wheelchair near open flame or combustible products. Serious injury or damage to property may result.

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

9000 XT Recliner only - DO NOT use the spreader bar to lift the wheelchair.

DO NOT stand on the frame of the wheelchair.

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

NEVER use quick-release axles on the 9000 XT (models with offset axle option only), 9000XDT or 9000XT Recliner wheelchairs.

Tire Pressure

DO NOT use the wheelchair unless it has the proper tire pressure (p.s.i.). DO NOT overinflate the tires. Failure to follow these warnings 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 or damage to the wheelchair and the warranty is void.

Weight Limitation

The 9000 SL, 9000 XT, and 9000XT Recliner wheelchairs have a weight limitation of 250 lbs (114 kg). The 9000XDT wheelchair has a weight limitation of 350 lbs (159 kg).

SECTION 2—SAFETY INSPECTION/TROUBLESHOOTING

NOTE: Initial adjustments should be made to suit the end user's personal body structure needs and preference. After initial setup, perform these procedures every time the wheelchair is serviced.

Checklist

- Ensure that the wheelchair rolls straight (no excessive drag or pull to one side).
- Inspect for loose or missing hardware on frame and crossbraces.
- Inspect for bent frame or crossbraces.
- Check that the wheel locks do not interfere with tires when rolling.
- Check that the wheel lock pivot points are free of wear and looseness.
- Check that the wheel locks are easy to engage.
- Ensure that the wheel locks prevent the wheelchair from moving when engaged.
- Inspect the seat and back for rips and sagging.
- Inspect the seat and back for loose or broken hardware.
- Inspect the back cane hand grips for wear/looseness/deterioration.
- 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 tires for flat spots and wear.
- Check pneumatic tires for proper inflation.

CAUTION

As with any vehicle, check the wheels and tires periodically for cracks and wear. Replace if damaged.

- If equipped, check that quick-release axles lock properly. Lubricate if necessary.
- Check that there is no excessive side movement or binding in the rear wheels when lifted and spun.
- Inspect rear wheels for cracked, bent or broken spokes.
- Ensure all spokes are uniformly tight.
- Inspect handrims for signs of rough edges or peeling.
- Inspect axle assembly for proper tension by spinning caster. Caster should come to a gradual stop.
- Adjust front casters/forks bearing system if wheel wobbles noticeably or binds to a stop.

- Ensure wheel bearings are clean and free of moisture.
- Check headtube locknuts for tightness.
- Inspect casters for cracks and wear.
- Inspect front casters for cracked, bent or broken spokes.
- Clean upholstery and armrests.
- Check that all labels are present and legible. Replace if necessary.

Troubleshooting

| Chair Veers Right/Left | Chair 3 Wheels | Sluggish Turn or Performance | Casters Flutter | Squeaks and Rattles | Looseness in Chair | Solutions |
|------------------------------|-------------------|---------------------------------|--------------------|---------------------------|--------------------------|---|
| X | X | X | X | | | Check tires for correct and equal pressure |
| | | X | X | X | X | Check for loose nuts and bolts. |
| X | X | | X | | | Check caster headtube angle. |
| X | X | | | | | Check that rear wheels are equally spaced away from seat frame. |

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 occur.

CAUTION

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

Suggested Maintenance Procedures

1. Make sure all nuts and bolts are tight. Check all parts for damage or wear and replace. Check all parts for proper adjustment.

2. 9000 SL/9000 XT only - Keep quick-release axles free of dirt and lint to ensure positive locking and proper operation. Refer to [Adjusting Quick-Release Axle](#) on page 57.
3. 9000 SL/9000 XT only - Oil quick-release axles at least once a month (3-in-1[®] oil or equivalent).

⚠ WARNING

DO NOT use the 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.

4. If tires are pneumatic, recommended tire pressure is listed on the sidewall of the tire.

CAUTION

As with any vehicle, check the wheels and tires periodically for cracks and wear. Replace if damaged.

5. The rear wheels, casters and tires should be checked periodically for cracks and wear, and should be replaced if damaged.

NOTE: Tire wear is excessive if:

- *Pneumatic Tires - there is missing tread or the tires are bald.*
- *Urethane Tires - there are cuts, surface defects or the tires are loose on the rims.*
- *Rubber Tires - 30% or more of the tire has worn away.*

NOTE: Invacare recommends that tires and casters be replaced every five (5) years.

6. Periodically adjust wheel locks in correlation to tire wear. Refer to [Adjusting Patient-Operated Wheel Locks](#) on page 83.
7. Periodically check handrims to ensure they are secured to the rear wheels. If loose, tighten them.
8. Periodically check caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon[®] lubricant if necessary.

⚠ WARNING

When cleaning rear cane or hand grip areas use only a clean towel lightly dampened with cool water. Verify that grips are dry prior to use. Use of soap or ammonia based cleaning solutions will result in the hand grips sliding off the cane assembly. Failure to observe this warning may result in injury to the user or bystanders.

9. Hand grips should be checked monthly for wear/looseness/deterioration. Clean if desired. Replace if looseness or deterioration is found.
10. Check upholstery for sagging, rips or tears.

SECTION 3—SEAT AND 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.

The seat depth, back height/angle, seat angle, size/position of the front casters, size/position of the rear wheels, anti-tipper model, as well as the user condition directly relate to the stability of the wheelchair. Any change to one (1) or any combination of the ten (10) may cause the wheelchair to decrease in stability. Use extreme caution when using a new seating position.

Adjusting Back Angle

NOTE: For this procedure, refer to FIGURE 3.1.

NOTE: This procedure applies to 9000 XT and 9000 SL adjustable back model wheelchairs only.

NOTE: Space saver arms DO NOT work with the adjustable angle back option.

1. Loosen, but DO NOT remove the pivot screw and locknut that secures the back angle bracket to the wheelchair frame.
2. Remove the hex screw, washers and locknut that secure the back angle bracket to the wheelchair frame.
3. Determine the mounting hole in the back angle bracket for the necessary back angle relative to the seat frame.
4. Re-install the back angle bracket to the wheelchair frame with the existing hex screw, washers and locknut. Securely tighten.
5. Securely tighten the pivot screw and locknut loosened in STEP 1.
6. Repeat STEPS 1-5 for the opposite side of the wheelchair.

NOTE: Ensure both back angle brackets are adjusted to the same mounting position.

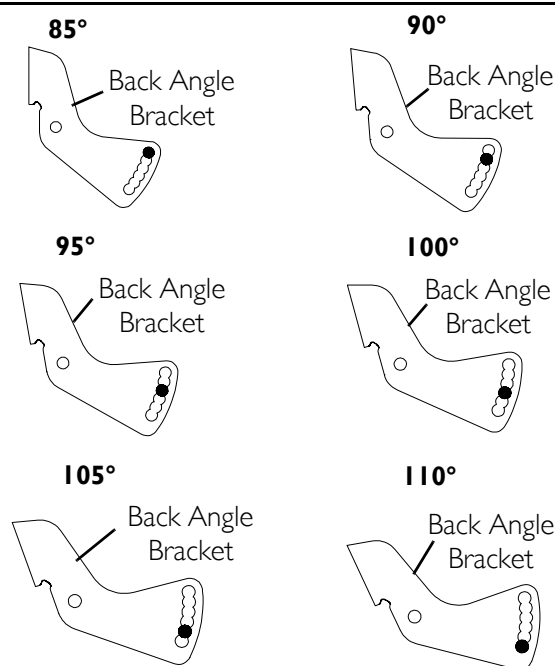
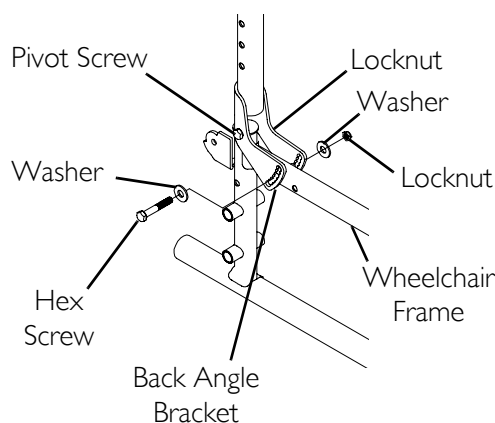


FIGURE 3.1 Adjusting Back Angle

Adjusting Back Height

9000 SL without Adjustable Back Angle Option

NOTE: For this procedure, refer to FIGURE 3.2.

NOTE: There are two (2) height ranges of back canes with three (3) height settings within each range (15 to 17-inches or 17 to 19-inches) and two (2) back upholstery heights available.

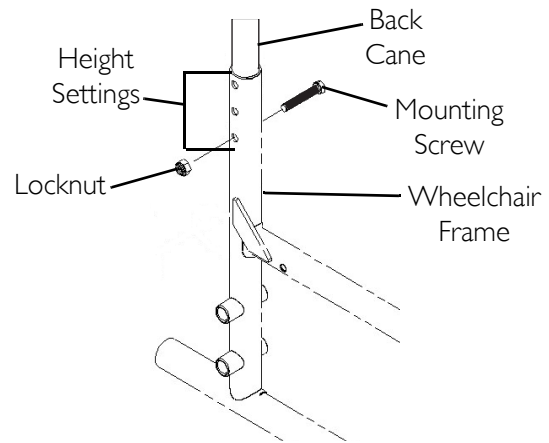
1. If changing back canes, remove the existing back upholstery. Refer to Replacing the Back Upholstery in the Owner's Manual, part number 1056953. Otherwise, proceed to STEP 2.
2. Flip swing back arms up and out of the way. Refer to Swing-Back Arms in the Owner's Manual, part number 1056953.
3. Remove the mounting screw and locknut that secure the existing back cane to the wheelchair frame.

NOTE: Make a note of mounting screw and locknut orientation for reinstallation.

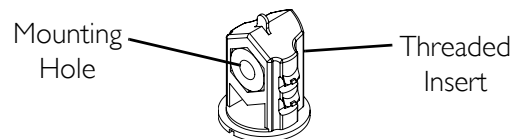
4. Remove existing back cane if changing height range.
5. Repeat STEPS 2-3 for opposite side of wheelchair.
6. Slide the new/existing back canes into the wheelchair frame.
7. Line up mounting holes in the wheelchair frame and the new/existing back canes.

NOTE: The back canes contain a threaded insert. Make sure mounting holes in the insert line up with the mounting holes in the back cane (Detail "A").

8. Install new/existing back cane by performing the following:
 - A. Thread existing mounting screw through the threaded insert of the new/existing back canes.
 - B. Securely tighten mounting screw and locknut that secure the new/existing back cane to the wheelchair frame.
9. If changing back canes, securely tighten the new back upholstery to the back canes. Refer to Replacing the Back Upholstery in the Owner's Manual, part number 1056953. Otherwise, proceed to STEP 9.
10. Flip the swing-back arms down for use. Refer to Swing-Back Arms in the Owner's Manual, part number 1056953.



DETAIL "A"



NOTE: Threaded insert fits inside back cane.

FIGURE 3.2 Adjusting Back Height - 9000 SL without Adjustable Back Angle Option

9000 SL with Adjustable Back Angle Option and 9000 XT/XDT

NOTE: For this procedure, refer to FIGURE 3.3.

1. Remove the two (2) mounting screws, spacers and locknuts that secure the two (2) back canes to the wheelchair frame (Detail "A").
2. Reposition the back canes to one (1) of five (5) height adjustment positions (Detail "B"):

| HOLE NUMBER | 1 & 2 | 2 & 3 | 3 & 4 | 4 & 5 | 5 & 6 |
|-------------|--------|--------|--------|--------|--------|
| BACK HEIGHT | 15 in. | 16 in. | 17 in. | 18 in. | 19 in. |

NOTE: Holes are numbered from bottom to top for reference only. There are no numbers on the back canes.

3. Reinstall the two (2) mounting screws, spacers and locknuts that secure the back canes to the wheelchair frame and securely tighten.

NOTE: The spacers must be on the outside of the wheelchair in order to properly tighten the mounting screws.

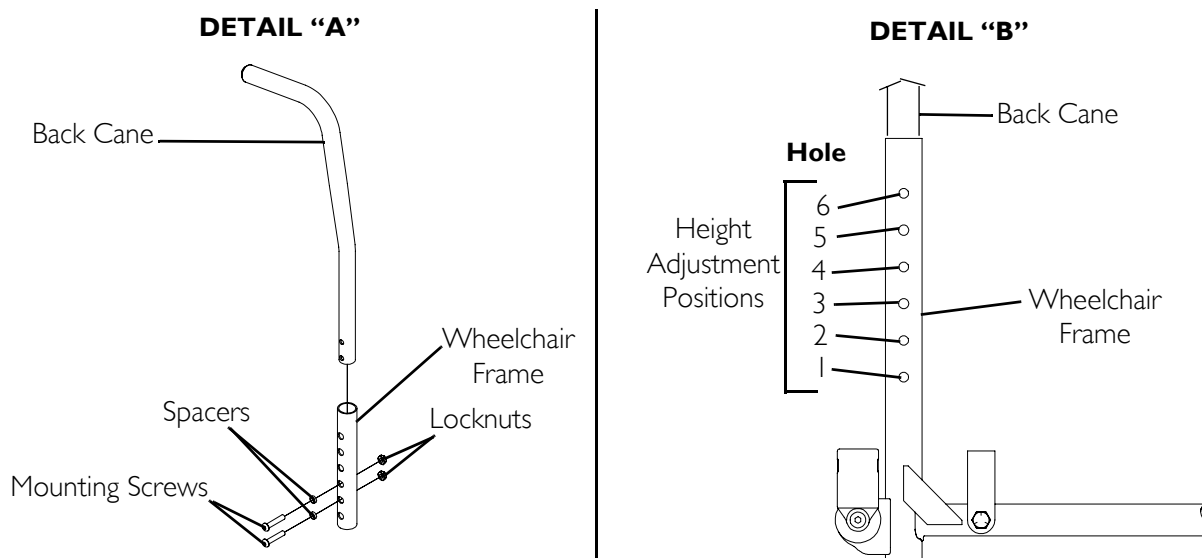


FIGURE 3.3 Adjusting Back Height - 9000 SL with Adjustable Back Angle Option and 9000 XT/XDT

Adjusting Seat Width

NOTE: For this procedure, refer to FIGURE 3.4.

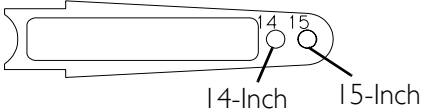
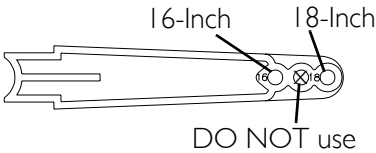
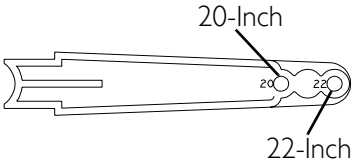
NOTE: When adjusting the seat width of the wheelchair, the back and seat upholstery MUST be changed. If applicable, the headrest pillow and headrest upholstery MUST be changed as well.

1. Remove the existing back and seat upholstery from the wheelchair. Refer to [Replacing the Back Upholstery](#) and [Replacing the Seat Upholstery](#) in the owner's manual, part number 1056953.

2. Remove the four (4) button screws and locknuts that secure the two (2) pivot links to the wheelchair frame and crossbraces.
3. Remove the two (2) button screws, locknuts and crossbrace saddle that secures the bottom of the crossbrace to the wheelchair frame. Repeat for other crossbrace.
4. Remove the hex screw, coved washers, washers and locknut that secure the two (2) crossbraces together. See Detail "B" of FIGURE 3.4.

NOTE: Make note of the orientation of the coved washers, washers and locknut for assembling the new crossbraces. Refer to Detail "B" of FIGURE 3.4.

5. Assemble the two (2) new crossbraces together with the existing hex screw, coved washers, washers and locknut. Securely tighten. Refer to Detail "B" of FIGURE 3.4 for hardware orientation.
6. Determine the correct pivot link and mounting hole to use with the desired seat width. Refer to the following chart.

| SEAT WIDTH | PIVOT LINK |
|----------------------|--|
| 14-INCH 15-INCH |  |
| *16-INCH *18-INCH |  |
| *20-INCH 22-INCH |  |

**NOTE: 16, 18, and 20-inch are the only crossbrace settings available on the 9000 SL.*

7. Secure the pivot link to the crossbraces and wheelchair frame with the four (4) button screws and locknuts. Securely tighten.

NOTE: Position crossbrace saddle on wheelchair frame using the washer on the underside of the wheelchair frame as a reference. Refer to Detail "A" of FIGURE 3.4 for proper positioning of the crossbrace saddle.

8. Reinstall the two (2) button screws, locknuts and crossbrace saddle that secure the bottom of the new crossbrace to the wheelchair frame. Refer to Detail "B" of FIGURE 3.4 for hardware orientation. Repeat for opposite crossbrace. Securely tighten.
9. Install the new back and seat upholstery onto the wheelchair. Refer to [Replacing Back Upholstery](#) and [Replacing Seat Upholstery](#) in the owner's manual, part number 1056953.

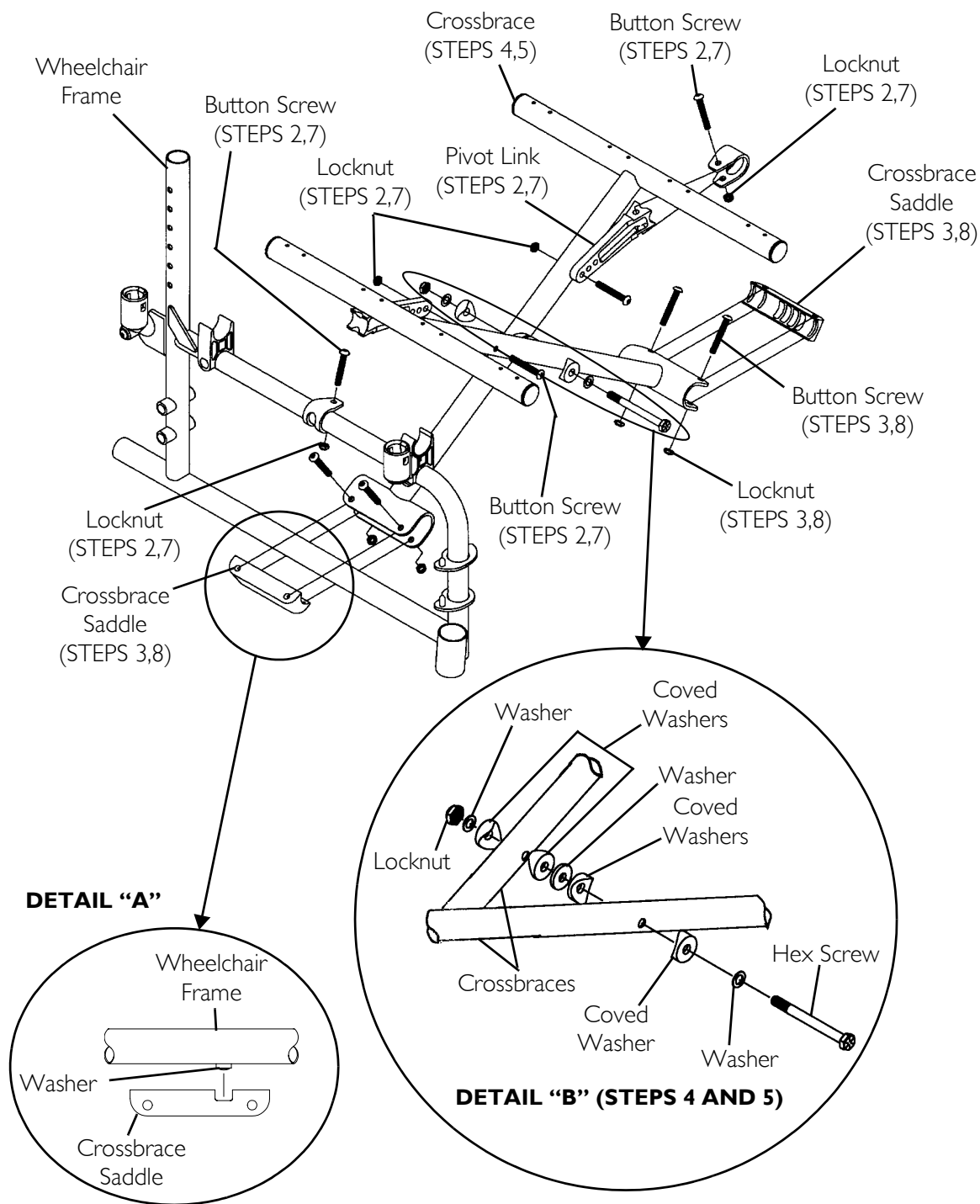


FIGURE 3.4 Adjusting Seat Width

Adjusting Seat Depth

⚠ WARNING

The seat depth, back height/angle, seat angle, size/position of the front casters, size/position of the rear wheels, anti-tipper model, as well as the user condition directly relate to the stability of the wheelchair. Any change to one (1) or any combination of the ten (10) may cause the wheelchair to decrease in stability. Use extreme caution when using a new seating position.

9000XT Model

NOTE: For this procedure, refer to FIGURE 3.5.

1. Remove the existing seat upholstery from the crossbraces. Refer to [Replacing Seat Upholstery](#) in the Owner's Manual, part number 1056953.

NOTE: When adjusting the seat depth of the wheelchair, the seat upholstery MUST also be changed.

2. Remove the two (2) plug buttons from the ends of the crossbraces that are toward the front of the wheelchair.

NOTE: The plug buttons are used in the ends of the seat extension spacers.

3. Install the two (2) seat extension tubes into the ends on the crossbraces.
4. Perform one (1) of the following:
 - 1-inch Seat Extension - Align the frontmost mounting hole of the seat extension tube with the frontmost mounting hole in the crossbrace.
 - 2-inch Seat Extension - Align the middle mounting hole of the seat extension tube with the frontmost mounting hole in the crossbrace.
5. Repeat STEP 4 for the opposite seat extension tube.
6. Install the two (2) seat extension spacers onto the two (2) seat extension tubes.
7. Secure the new seat upholstery to the crossbraces. Refer to [Replacing Seat Upholstery](#) in the Owner's Manual, part number 1056953.

NOTE: Make sure to line up the mounting holes in the seat extension tubes and the seat extension spacers with the new seat upholstery.

8. Install plug buttons into the ends of the seat extension spacers.

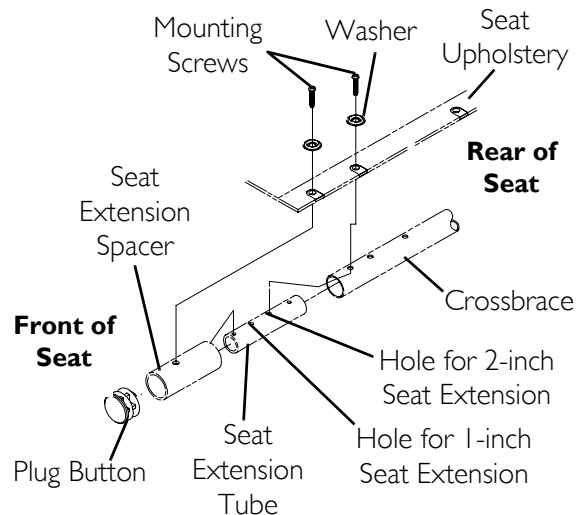


FIGURE 3.5 Adjusting Seat Depth - 9000XT Model

9000 XDT and 9000 SL

NOTE: For this procedure, refer to FIGURE 3.6.

NOTE: 9000 XDT wheelchairs have two (2) frame depth ranges: 16 to 18 inches and 19 to 20 inches. A 16-18-inch frame depth wheelchair cannot be adjusted to a 19 to 20-inch range and vice-versa.

1. Remove the existing seat upholstery from the wheelchair. Refer to Replacing the Seat Upholstery in the Owner's Manual, part number 1056953.

NOTE: When adjusting the seat depth of the wheelchair, the seat upholstery MUST also be changed.

2. Remove the two (2) plug buttons from the ends of the crossbraces that are towards the front of the wheelchair.

NOTE: The two (2) plug buttons are used in the ends of the seat extension tubes.

3. Install the two (2) seat extension tubes into the ends on the crossbraces.
4. Perform one (1) of the following:

- 9000 XDT - Align the second mounting hole from the rear of the seat extension tube with the frontmost mounting hole in the crossbrace.

NOTE: DO NOT use back mounting hole. If back mounting hole is used, the mounting hole for the other mounting screw will not line up properly.

- 9000 SL - Align the rear mounting hole of the seat extension tube with the second mounting hole from the front of the crossbrace. Slide spacer tube over seat extension tube.

NOTE: The rear mounting hole is further from its end of the seat extension tube than the front mounting hole is from its end.

NOTE: The end of the spacer tube that is closer to the spacer tube mounting hole should face to the front.

5. Repeat STEP 4 for the opposite seat extension tube.

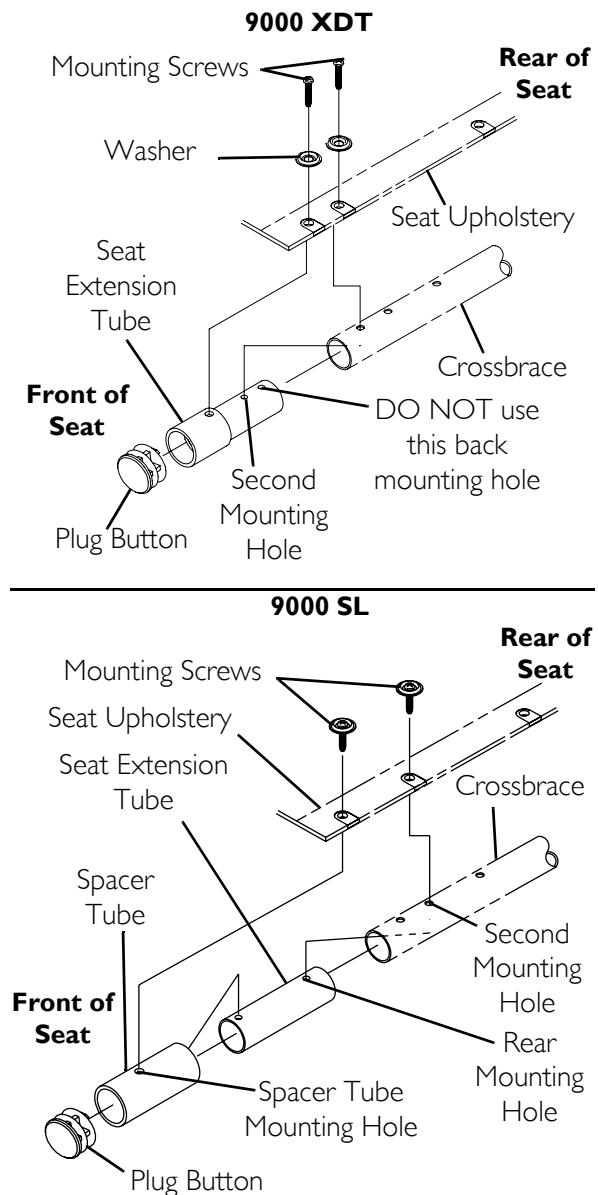


FIGURE 3.6 Adjusting Seat Depth - 9000 XDT and 9000 SL

6. Install the new seat upholstery onto the wheelchair. Make sure to line up the mounting holes in the seat extension tubes with the new seat upholstery. Refer to Replacing Seat Upholstery in the Owner's Manual, part number 1056953.
7. Install plug buttons into the ends of the seat extension tubes.

SECTION 4—FRONT CASTERS

⚠ WARNING

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

Front Caster Mounting Adjustments

NOTE: For this procedure, refer to FIGURE 4.1.

1. Remove the hex screw, washers (if so equipped) and locknut that secure the front caster to the fork.
2. Reposition the front caster on the fork to the determined mounting hole. Refer to Changing Seat-to-Floor Height/Seat-to-Floor Angle on page 29 to determine front caster mounting hole for front caster size and seat-to-floor height.
3. Secure front caster to fork with existing hex screw and locknut. Securely tighten.

⚠ WARNING

Make sure both front casters are positioned in the same mounting hole before using the wheelchair. Otherwise, injury may result.

4. Repeat STEPS 1-3 for the opposite front caster.

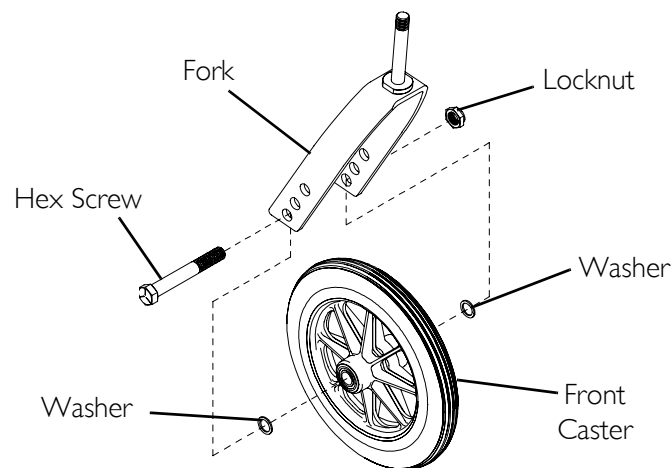


FIGURE 4.1 Front Caster Mounting Adjustments

Converting from Trailing to Leading or Leading to Trailing Casters

NOTE: For this procedure, refer to FIGURE 4.2.

Adjusting the caster headtube position (leading or trailing) changes the wheelbase length of the wheelchair. There are two (2) adjustments which allow for a:

- Longer wheelbase - The caster headtube is leading or in front of the wheelchair frame.
- Shorter wheelbase - The caster headtube is trailing or behind the wheelchair frame.

NOTE: If the caster headtubes are positioned in the leading position when using 8-inch casters, a 60° footrest is recommended to allow adequate room for feet and caster swivel.

NOTE: Make note of the orientation of the cam for proper reinstallation. If changing the seat-to-floor height and/or the seat-to-floor angle, refer to [Changing Seat-to-Floor Height/Seat-to-Floor Angle](#) on page 29.

1. Remove the two (2) mounting screws, coved spacer, washer, cam and two (2) locknuts that secure the insert and the caster headtube to the wheelchair frame.

NOTE: The insert will drop if it is not caught.

2. Repeat STEP 1 for opposite side.
3. Position the existing right caster headtube onto the left wheelchair frame.

NOTE: Ensure the insert is positioned into the bottom of the wheelchair frame with the mounting holes aligned with the frame mounting holes.

4. Ensure coved spacer is properly positioned with the rounded end up. The cut-out (Detail "A") on the underside of the coved spacer should clear the frame joint.

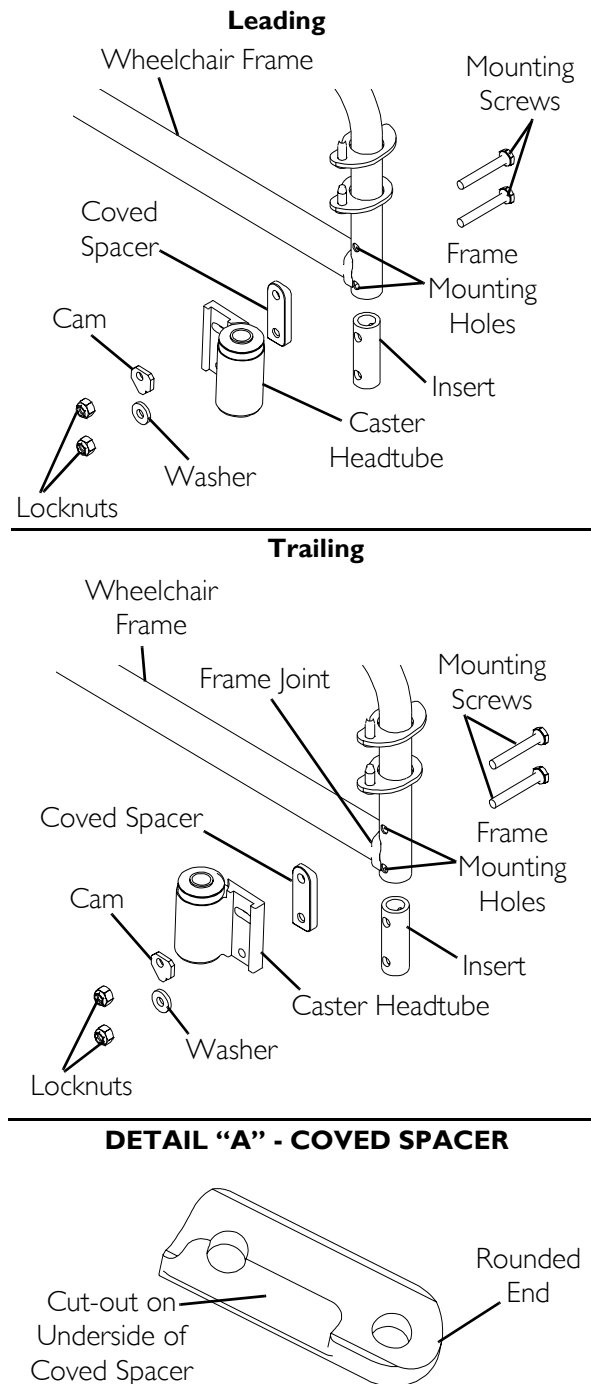


FIGURE 4.2 Converting from Trailing to Leading or Leading to Trailing Casters

5. Loosely tighten the bottom of the existing caster headtube to the wheelchair frame using existing hardware.
6. Adjust the seat-to-floor angle. Refer to Changing Seat-to-Floor Height/Seat-to-Floor Angle on page 29.
7. Secure the cam to the top of the caster headtube with the existing hardware.
8. Securely tighten the caster headtube to the wheelchair frame. Torque locknuts to 120-140 inch-lbs.
9. Adjust the anti-tippers. Refer to Installing/Adjusting Anti-tippers on page 80.

Repositioning/Replacing Cam

NOTE: For this procedure, refer to FIGURE 4.2.

1. Do one (1) of the following:
 - To Reposition - Refer to Changing Seat-to-Floor Height/Seat-to-Floor Angle on page 29.
 - To Replace - Before removing the cam, make note of the position of the cam in the caster headtube for proper reinstallation. Then remove.
2. Loosen the bottom mounting screw and locknut that secures the caster headtube to the wheelchair frame.

NOTE: Loosening the bottom mounting screw allows the cam to be positioned easily in the caster headtube.

3. Remove the top locknut and cam from the caster headtube.
4. Install the new/existing cam at the position observed in STEP 1.
5. Tighten both locknuts to secure the caster headtube to the wheelchair frame. Torque to 120-140 inch-lbs.

SECTION 5—SEAT TO FLOOR

⚠ WARNING

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

Changing Seat-to-Floor Height/Seat-to-Floor Angle

⚠ WARNING

Before performing this procedure, refer to **Stability - All Models** on page 12 for additional requirements.

DO NOT deviate from the charts on the following pages. If the restrictions for seat-to-floor heights and seat-to-floor angles are not followed, the wheelchair will be in an unsafe position. Before changing these settings, refer to the following charts for the allowable positions.

NOTE: For this procedure, refer to FIGURE 5.1.

NOTE: This section is for non-recliner wheelchairs only. For recliners, refer to [Changing Seat-to-Floor Height](#) on page 77.

NOTE: Seat-to-floor angle adjustments are only available on 9000 XT with the offset axle option and adjustable caster journal (ADJC). All other models/options have a 3° seat-to-floor angle.

The different Seat-to-Floor heights and angles (Detail "A") are possible by using different combinations of rear wheels, rear wheel positions, front caster positions, front caster size and cam positions.

1. Determine the model and frame style of your wheelchair. Refer to the following chart and FIGURE 5.1.

| MODEL | FRAME STYLE | | |
|--------------------------------------|-------------|------------|-----------|
| | Adult/Hemi | Adult/Tall | Super Low |
| 9000 SL | X | N/A | N/A |
| 9000 XT | X | N/A | X |
| 9000 XT with Bolt-on-Headtube (ADJC) | X | N/A | N/A |
| 9000 XDT | N/A | X | N/A |

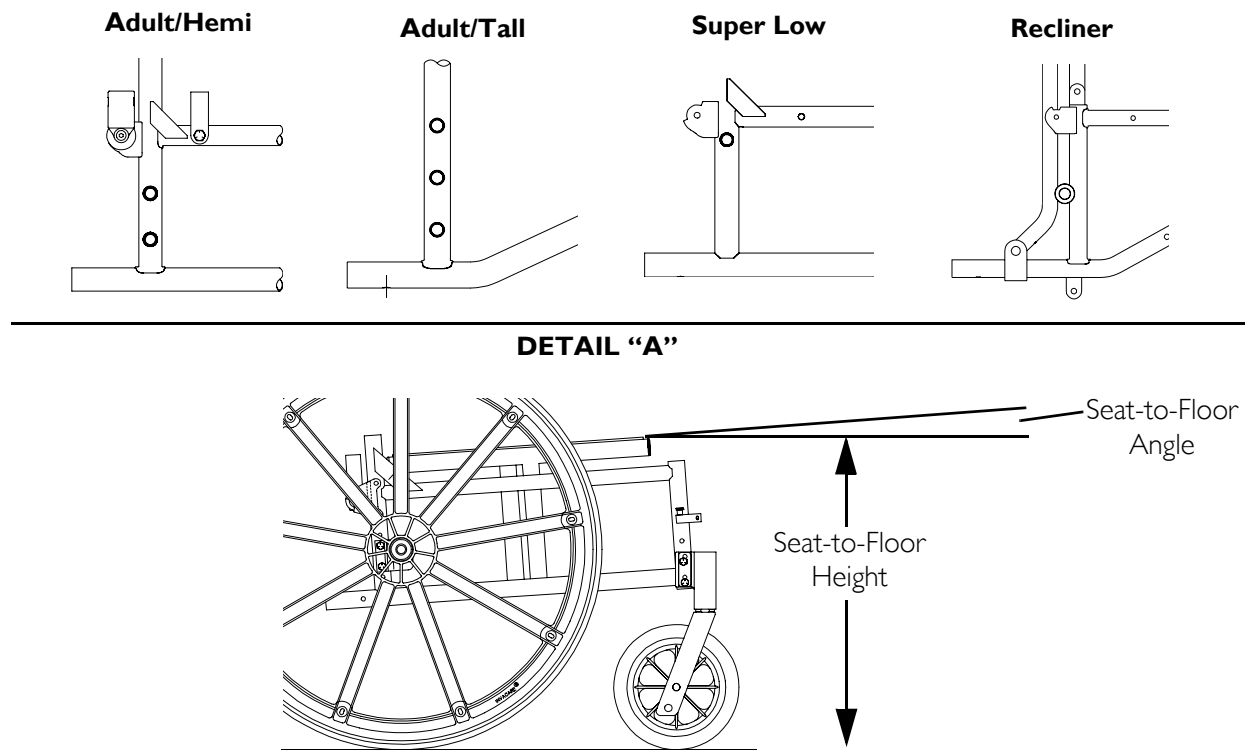


FIGURE 5.1 Changing Seat-to-Floor Height/Seat-to-Floor Angle

2. Refer to the following charts of rear wheel sizes and front caster sizes to determine mounting adjustments for obtainable seat-to-floor heights/angles for the appropriate frame style.

- [Super Low Frame Style](#) on page 31
- [Adult/Tall Frame Style](#) on page 31
- [Adult/Hemi Frame Styles](#) on page 32
- [Changing Seat-to-Floor Height](#) on page 77 for recliner frame styles

NOTE: If using amputee brackets, the following restrictions apply:

- *Angle - a 3° seat-to-floor angle is the only available angle.*
- *Rear Wheel Mounting Position - Refer to the charts in the Owner's Manual, part number 1056953, for the proper rear wheel mounting position.*

3. Remove the rear wheels. Refer to [Removing/Installing Rear Wheels](#) on page 52.
4. If necessary, adjust the caster headtube position and/or the cam position. Refer to [Converting from Trailing to Leading or Leading to Trailing Casters](#) on page 27 and/or [Repositioning/Replacing Cam](#) on page 28.
5. If necessary, replace the forks. Refer to [Installing/Replacing Six or Eight-Inch Front Casters and Forks](#) in the Owner's Manual, part number 1056953.
6. If necessary, adjust the front caster position in the fork. Refer to [Front Caster Mounting Adjustments](#) on page 26.
7. Reinstall the rear wheels onto the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 52.

8. Adjust the wheel locks. Refer to Using/Adjusting the Patient Operated Wheel Locks in the Owner's Manual, part number 1056953.

⚠ WARNING

After changing seat-to-floor height and/or seat-to-floor angle, the anti-tippers MUST be replaced or adjusted before using the wheelchair. Refer to Installing/Adjusting Anti-tippers on page 80.

Super Low Frame Style

NOTE: For this information, refer to the following table and to FIGURE 5.2.

6-inch Front Casters, 3° Seat Angle

| SEAT-TO-FLOOR HEIGHT (INCHES) | FRONT CASTER MOUNTING POSITION | REAR WHEEL SIZE | ANTI-TIPPER PART NUMBER |
|-------------------------------|--------------------------------|-----------------|-------------------------|
| 13½ | Top | 20-inch | 1064520 |
| 14½ | Middle | 22-inch | 1064520 |



FIGURE 5.2 Super Low Frame Style

Adult/Tall Frame Style

NOTE: For this information, refer to the following table and to FIGURE 5.3.

8-inch Front Casters, 3° Seat Angle

| SEAT-TO-FLOOR HEIGHT (INCHES) | FRONT CASTER MOUNTING POSITION | REAR WHEEL SIZE | REAR WHEEL MOUNTING POSITION | ANTI-TIPPER PART NUMBER |
|-------------------------------|--------------------------------|-----------------|------------------------------|-------------------------|
| 17½ | Top | 24-inch | Top | 1058752 |
| 19½ | Top w/ 2-inch extension | 24-inch | Middle | 1058752 |
| 19½ | Bottom | 24-inch | Middle | 1058752 |
| 21½ | Bottom w/ 2-inch extension | 24-inch | Bottom | 1058836 |

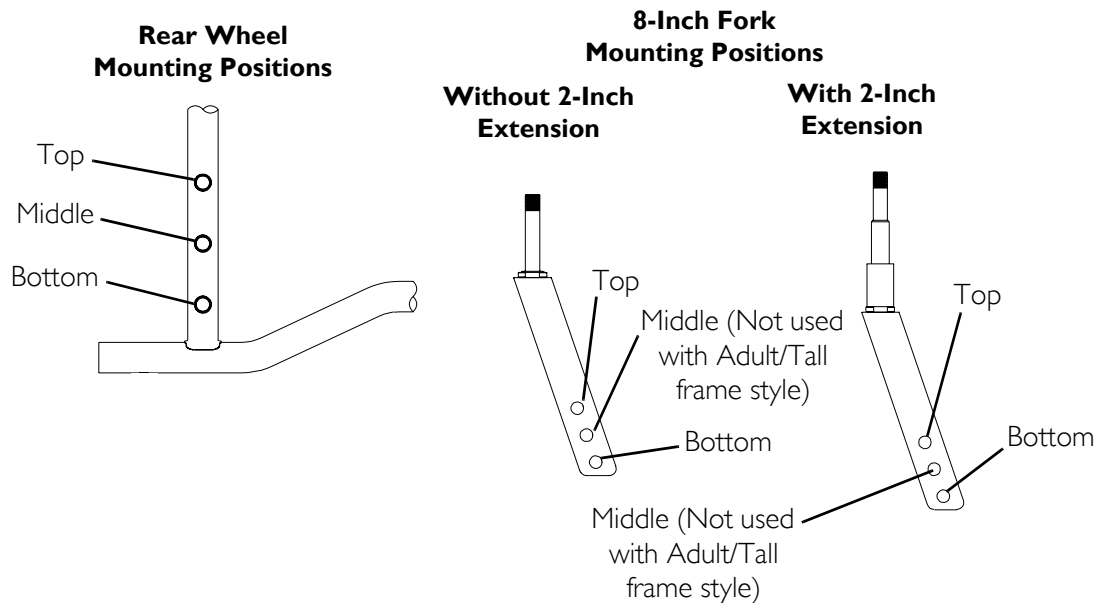


FIGURE 5.3 Adult/Tall Frame Style

Adult/Hemi Frame Styles

Refer to the charts on the following pages for obtainable seat-to-floor heights and seat-to-floor angles for wheelchairs with the adult/hemi frame style.

24-Inch Rear Wheels and 8-Inch Front Casters

⚠ WARNING

If changing the seat-to-floor angle to 6°, anti-tippers **MUST be installed.**

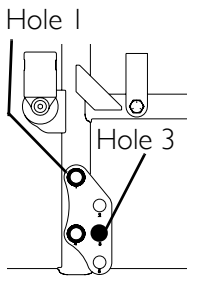
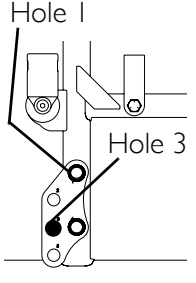
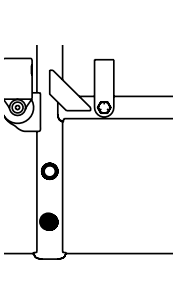
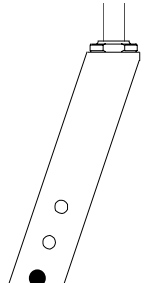
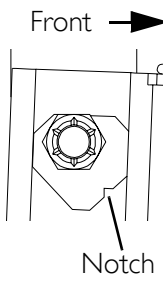
Refer to the following table to determine the obtainable seat-to-floor heights and seat-to-floor angles for 24-inch rear wheels and 8-inch front casters:

| SEAT-TO-FLOOR HEIGHT* | SEAT-TO-FLOOR ANGLE | REFER TO |
|-----------------------|---------------------|----------|
| 19½ inches | 3° | Chart 1 |
| 19½ inches | 6° | Chart 2 |
| 18½ inches | 0° | Chart 3 |
| 18½ inches | 3° | Chart 4 |
| 18½ inches | 6° | Chart 5 |
| 17½ inches | 0° | Chart 6 |
| 17½ inches | 3° | Chart 7 |
| 17½ inches | 6° | Chart 8 |

**NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼ inch to the measurements listed above. These heights can vary +/- ¼ inch due to tire wear and manufacturing tolerances.*

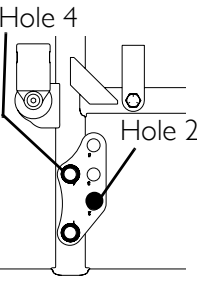
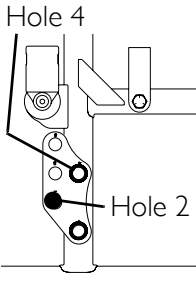
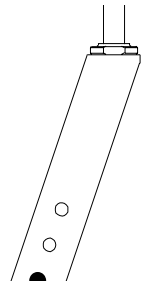
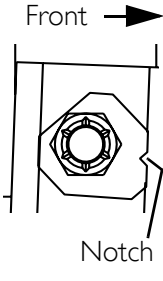
NOTE: Charts 1 to 8 apply to adult/hemi frame styles only. Refer to the charts for seat-to-floor height settings for adult/tall (*Adult/Tall Frame Style* on page 31) and super low frame styles (*Super Low Frame Style* on page 31) and *Changing Seat-to-Floor Height* on page 77 for recliner frame styles.

Chart 1 - Seat-to-Floor Height of 19½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  |  | 1360 On-Chair 1058836 Off-Chair |  |  |

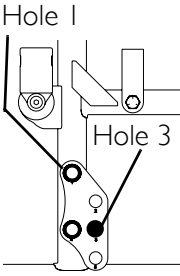
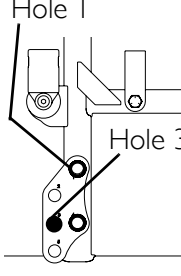
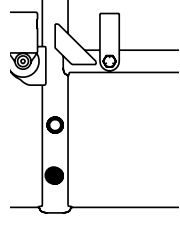
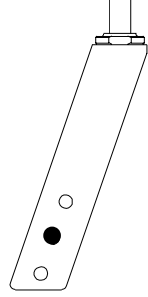
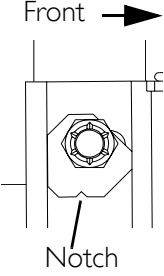
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to *Converting from Trailing to Leading or Leading to Trailing Casters* on page 27.

Chart 2 - Seat-to-Floor Height of 19½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|--------------------------|---------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1113766 Off-Chair |  |  |

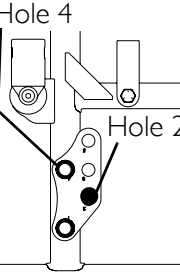
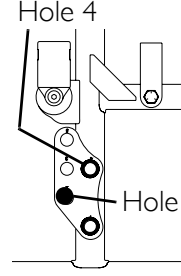
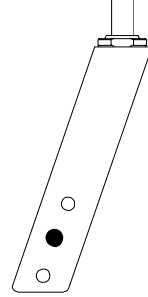
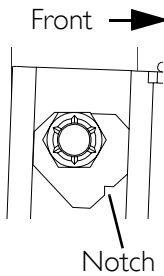
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to *Converting from Trailing to Leading or Leading to Trailing Casters* on page 27.

Chart 3 - Seat-to-Floor Height of 18½ inches and 0° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|-----------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  |  | N/A On-Chair 1058836 Off-Chair |  |  |

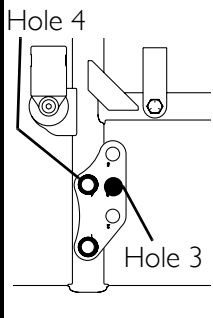
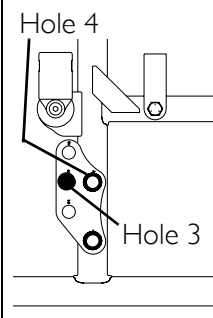
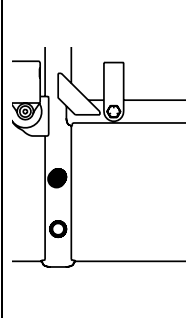
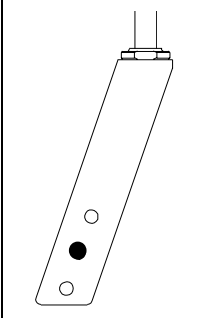
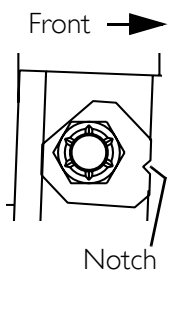
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 4 - Seat-to-Floor Height of 18½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | 1360 On-Chair 1058836 Off-Chair |  |  |

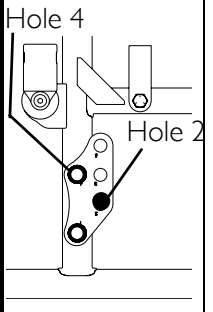
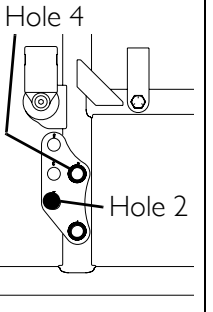
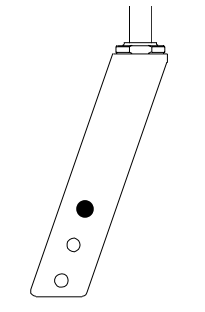
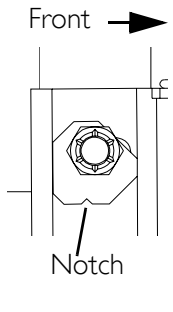
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 5 - Seat-to-Floor Height of 18½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|--------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  |  | N/A On-Chair 1113766 Off-Chair |  |  |

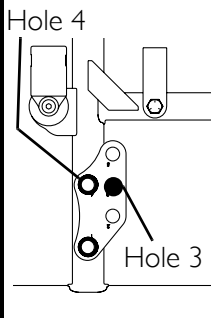
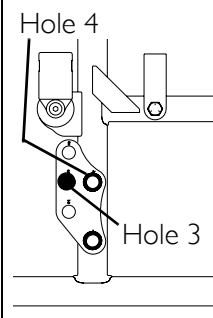
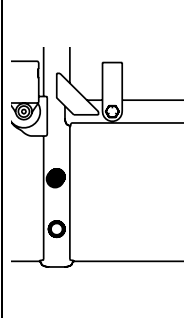
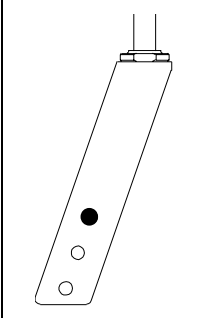
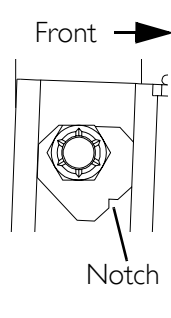
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 6 - Seat-to-Floor Height of 17½ inches and 0° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058836 Off-Chair |  |  |

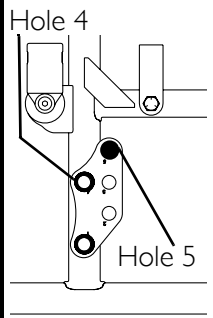
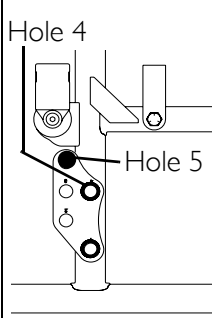
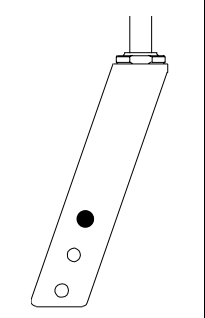
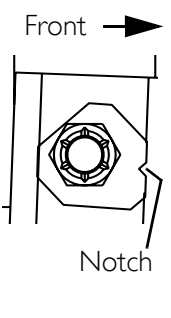
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 7 - Seat-to-Floor Height of 17½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  |  | I360 On-Chair I058836 Off-Chair |  |  |

*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 8 - Seat-to-Floor Height of 17½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|--------------------------|---------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair I113766 Off-Chair |  |  |

*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

24-Inch Rear Wheels and 6-Inch Front Casters

⚠ WARNING

If changing the seat-to-floor angle to 6°, anti-tippers **MUST be installed.**

Refer to the following table to determine the obtainable seat-to-floor heights and seat-to-floor angles for 24-inch rear wheels and 6-inch front casters:

| SEAT-TO-FLOOR HEIGHT* | SEAT-TO-FLOOR ANGLE | REFER TO |
|-----------------------|---------------------|----------|
| 17½ inches | 0° | Chart 9 |
| 17½ inches | 3° | Chart 10 |
| 17½ inches | 6° | Chart 11 |
| 16½ inches | 0° | Chart 12 |
| 16½ inches | 3° | Chart 13 |
| 15½ inches | 0° | Chart 14 |

*NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼ inch to the measurements listed above. These heights can vary +/- ¼ inch due to tire wear and manufacturing tolerances.

NOTE: Charts 9 to 14 apply to adult/hemi frame styles only. Refer to the charts for seat-to-floor height settings for adult/tall (Adult/Tall Frame Style on page 31) and super low frame styles (Super Low Frame Style on page 31) and Changing Seat-to-Floor Height on page 77 for recliner frame styles.

Chart 9 - Seat-to-Floor Height of 17½ inches and 0° Angle

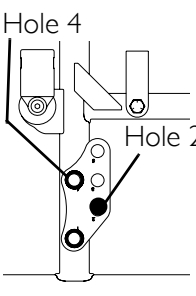
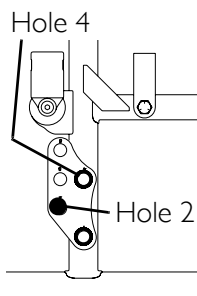
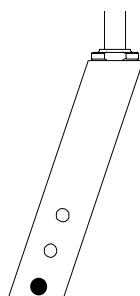
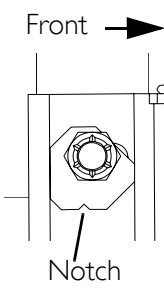
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|--------------------------|-----------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058836 Off-Chair |  |  |

Chart 10 - Seat-to-Floor Height of 17½ inches and 3° Angle

| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---------------------|----------|----------|--|----------------------|----------------------|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
| | | | N/A On-Chair 1058752 Off-Chair | | |

Chart 11 - Seat-to-Floor Height of 17½ inches and 6° Angle

| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---------------------|----------|-----------------------------|--|----------------------|----------------------|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
| | | N/A for this frame style | N/A On-Chair 1113765 Off-Chair | | |

Chart 12 - Seat-to-Floor Height of 16½ inches and 0° Angle

| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---------------------|----------|----------|--|----------------------|----------------------|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
| | | | N/A On-Chair 1058836 Off-Chair | | |

Chart 13 - Seat-to-Floor Height of 16½ inches and 3° Angle

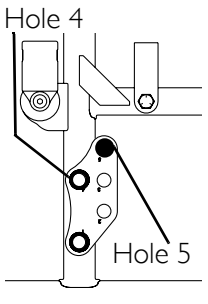
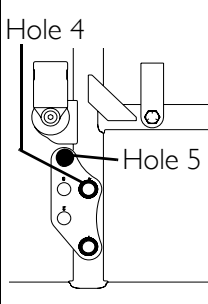
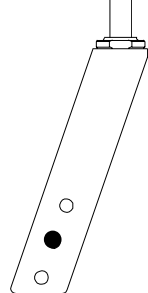
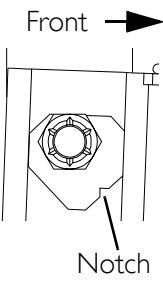
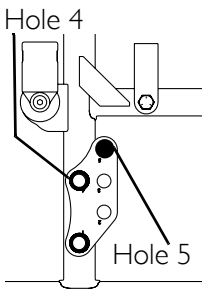
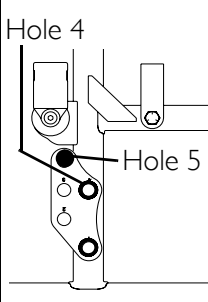
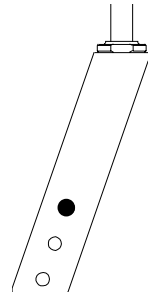
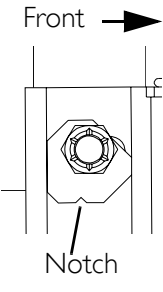
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058752 Off-Chair |  |  |

Chart 14 - Seat-to-Floor Height of 15½ inches and 0° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|--|--|-----------------------------|---------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058752 Off-Chair |  |  |

22-Inch Rear Wheels and 8-Inch Front Casters**⚠ WARNING**

If changing the seat-to-floor angle to 6°, anti-tippers **MUST** be installed.

SECTION 5—SEAT TO FLOOR

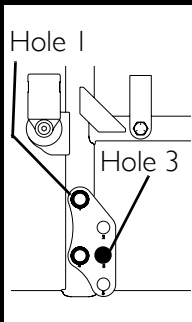
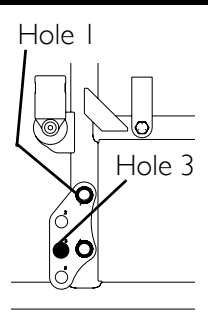
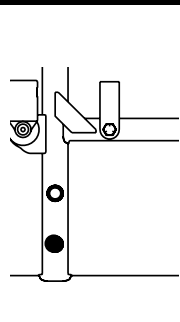
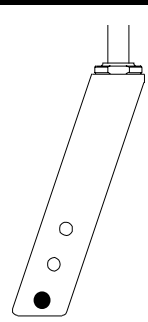
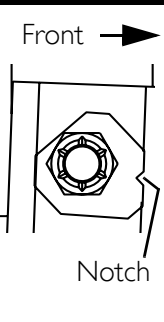
Refer to the following table to determine the obtainable seat-to-floor heights and seat-to-floor angles for 22-inch rear wheels and 8-inch front casters:

| SEAT-TO-FLOOR HEIGHT* | SEAT-TO-FLOOR ANGLE | REFER TO |
|-----------------------|---------------------|----------|
| 19½ inches | 6° | Chart 15 |
| 18½ inches | 3° | Chart 16 |
| 18½ inches | 6° | Chart 17 |
| 17½ inches | 0° | Chart 18 |
| 17½ inches | 3° | Chart 19 |
| 17½ inches | 6° | Chart 20 |

*NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼ inch to the measurements listed above. These heights can vary +/- ¼ inch due to tire wear and manufacturing tolerances.

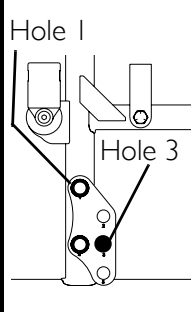
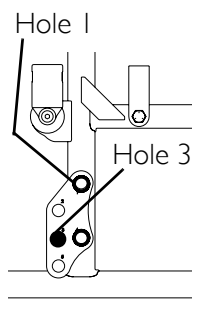
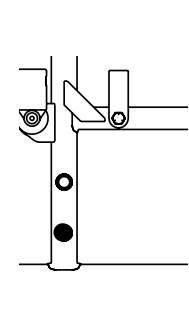
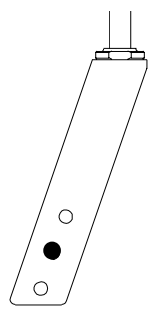
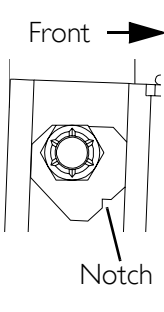
NOTE: Charts 15 to 20 apply to adult/hemi frame styles only. Refer to the charts for seat-to-floor height settings for adult/tall (Adult/Tall Frame Style on page 31) and super low frame styles (Super Low Frame Style on page 31) and Changing Seat-to-Floor Height on page 77 for recliner frame styles.

Chart 15 - Seat-to-Floor Height of 19½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|-----------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  |  | N/A On-Chair 1113766 Off-Chair |  |  |

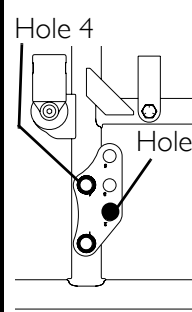
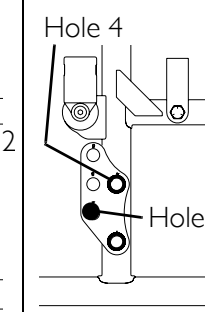
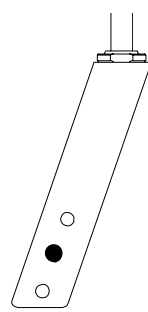
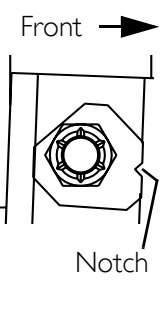
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 16 - Seat-to-Floor Height of 18½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  |  | 1360 On-Chair 1058836 Off-Chair |  |  |

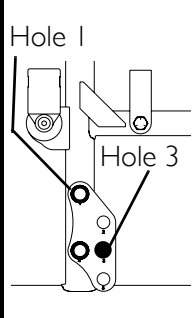
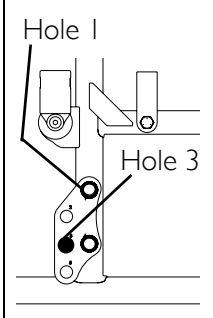
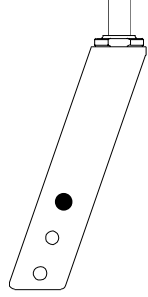
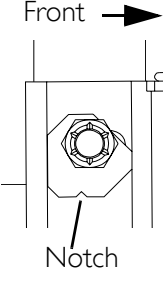
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 17 - Seat-to-Floor Height of 18½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1113766 Off-Chair |  |  |

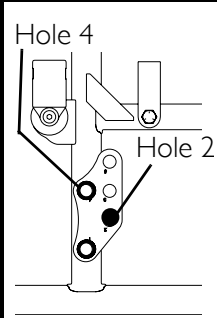
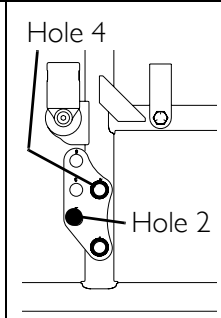
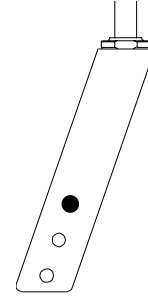
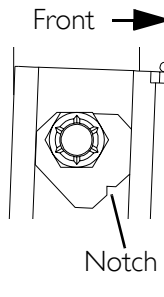
*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

Chart 18 - Seat-to-Floor Height of 17½ inches and 0° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|---------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058836 Off-Chair |  |  |

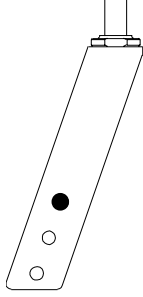
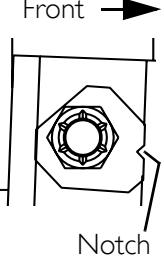
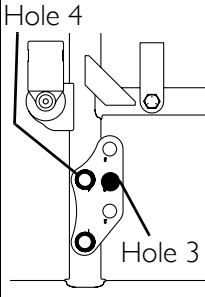
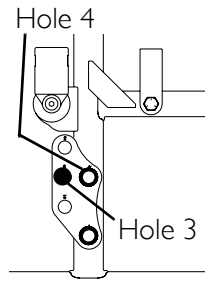
**NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.*

Chart 19 - Seat-to-Floor Height of 17½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058836 Off-Chair |  |  |

**NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.*

Chart 20 - Seat-to-Floor Height of 17½ inches and 6° Angle

| REAR WHEEL POSITION | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|--|---|---|
| OFFSET AXLE OPTION | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD* | REARWARD | N/A On-Chair 1113766 Off-Chair |  |  |
|  |  | | | |

*NOTE: This offset axle plate position requires the caster headtube to be leading to provide adequate tire clearance between the rear tire and the front caster. Refer to Converting from Trailing to Leading or Leading to Trailing Casters on page 27.

22-Inch Rear Wheels and 6-Inch Front Casters

⚠ WARNING

If changing the seat-to-floor angle to 6°, anti-tippers **MUST** be installed.

Refer to the following table to determine the obtainable seat-to-floor heights and seat-to-floor angles for 22-inch rear wheels and 6-inch front casters:

| SEAT-TO-FLOOR HEIGHT* | SEAT-TO-FLOOR ANGLE | REFER TO |
|--------------------------|------------------------|----------|
| 17½ inches | 0° | Chart 21 |
| 17½ inches | 3° | Chart 22 |
| 17½ inches | 6° | Chart 23 |
| 16½ inches | 0° | Chart 24 |
| 16½ inches | 3° | Chart 25 |
| 16½ inches | 6° | Chart 26 |
| 15½ inches | 0° | Chart 27 |
| 15½ inches | 3° | Chart 28 |

*NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼ inch to the measurements listed above. These heights can vary +/- ¼ inch due to tire wear and manufacturing tolerances.

NOTE: Charts 21 to 28 apply to adult/hemi frame styles only. Refer to the charts for seat-to-floor height settings for adult/tall (Adult/Tall Frame Style on page 31) and super low frame styles (Super Low Frame Style on page 31) and Changing Seat-to-Floor Height on page 77 for recliner frame styles.

Chart 21 - Seat-to-Floor Height of 17½ inches and 0° Angle

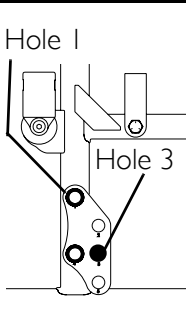
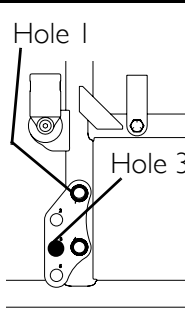
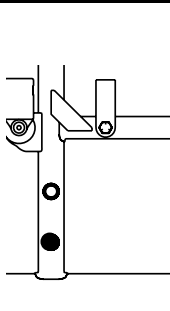
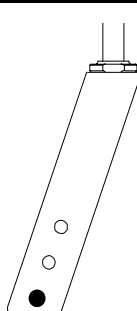
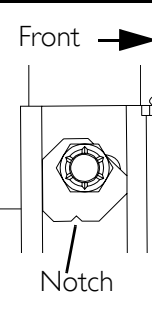
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|-----------------------------------|---|---|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | N/A On-Chair 1058836 Off-Chair |  |  |

Chart 22 - Seat-to-Floor Height of 17½ inches and 3° Angle

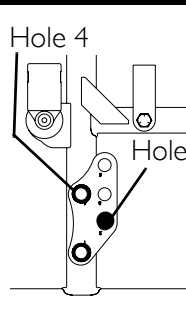
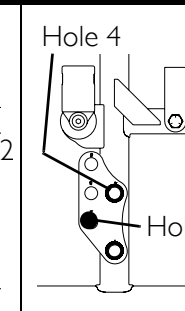
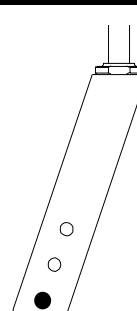
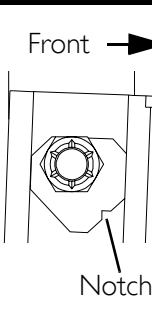
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|--|--|-----------------------------|--------------------------------------|--|--|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058752 Off-Chair |  |  |

Chart 23 - Seat-to-Floor Height of 17½ inches and 6° Angle

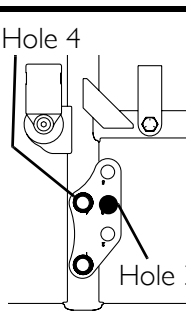
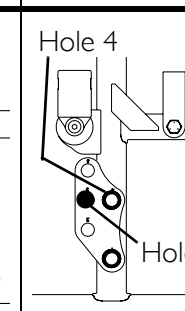
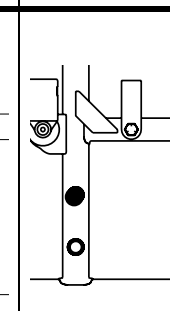

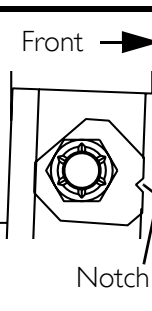
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|--------------------------------------|---|---|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | N/A On-Chair 1113765 Off-Chair |  |  |

Chart 24 - Seat-to-Floor Height of 16½ inches and 0° Angle

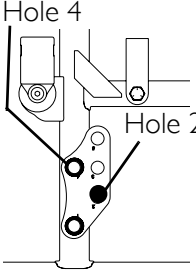
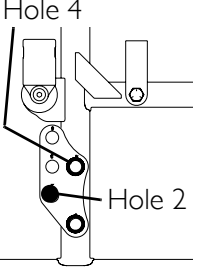
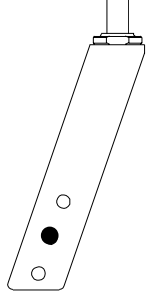
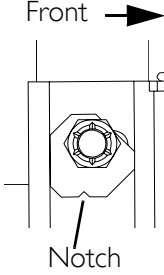
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058836 Off-Chair |  |  |

Chart 25 - Seat-to-Floor Height of 16½ inches and 3° Angle

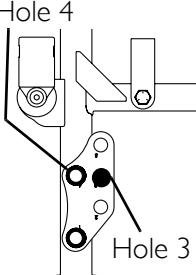
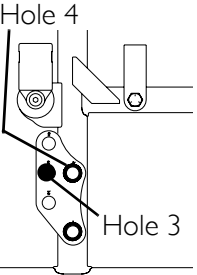
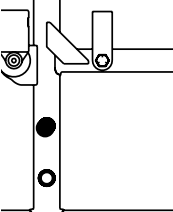
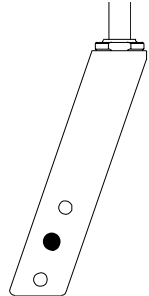
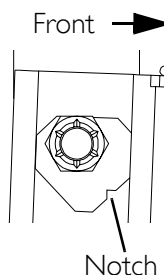
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|--|--|---|--|--|--|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | 1360A On-Chair 1058752 Off-Chair |  |  |

Chart 26 - Seat-to-Floor Height of 16½ inches and 6° Angle

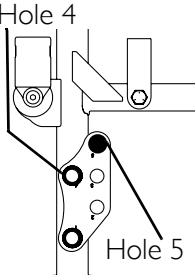
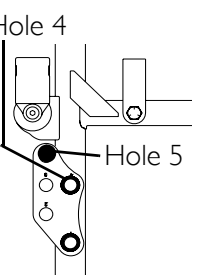
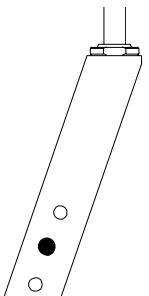
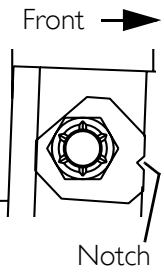
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1113765 Off-Chair |  |  |

Chart 27 - Seat-to-Floor Height of 17½ inches and 0° Angle

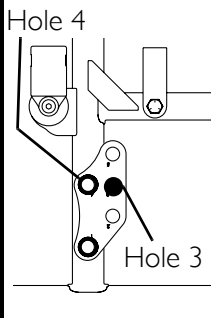
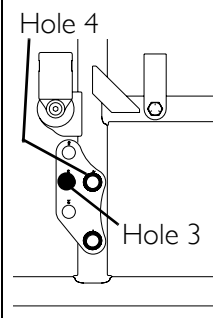
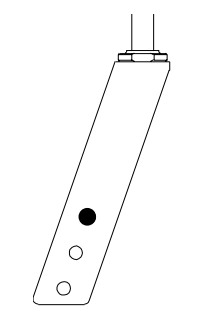
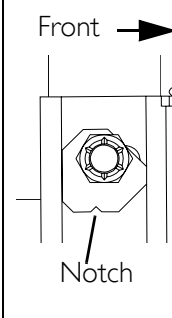
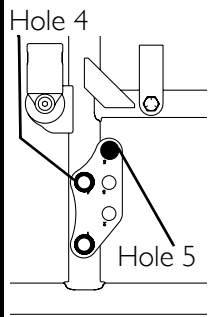
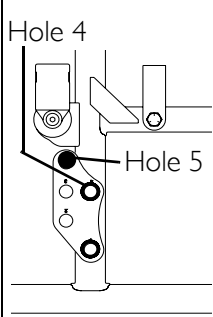
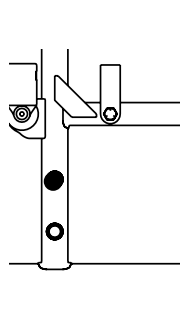
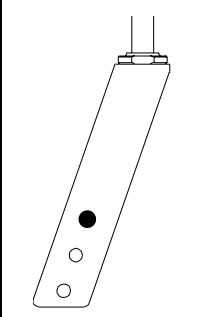
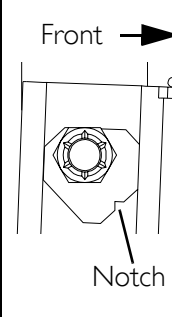
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|----------|--------------------------------------|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | | N/A On-Chair 1058752 Off-Chair |  |  |

Chart 28 - Seat-to-Floor Height of 15½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|--|--|--|--------------------------------------|--|--|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | N/A On-Chair 1058752 Off-Chair |  |  |

20-Inch Rear Wheels and 8-Inch Front Casters

⚠ WARNING

If changing the seat-to-floor angle to 6°, anti-tippers MUST be installed.

Refer to the following table to determine the obtainable seat-to-floor heights and seat-to-floor angles for 20-inch rear wheels and 8-inch front casters:

| SEAT-TO-FLOOR HEIGHT* | SEAT-TO-FLOOR ANGLE | REFER TO |
|--------------------------|------------------------|----------|
| 18½ inches | 6° | Chart 29 |
| 17½ inches | 3° | Chart 30 |
| 17½ inches | 6° | Chart 31 |

*NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼ inch to the measurements listed above. These heights can vary +/- ¼ inch due to tire wear and manufacturing tolerances.

NOTE: Charts 29 to 31 apply to adult/hemi frame styles only. Refer to the charts for seat-to-floor height settings for adult/tall (Adult/Tall Frame Style on page 31) and super low frame styles (Super Low Frame Style on page 31) and Changing Seat-to-Floor Height on page 77 for recliner frame styles.

Chart 29 - Seat-to-Floor Height of 18½ inches and 6° Angle

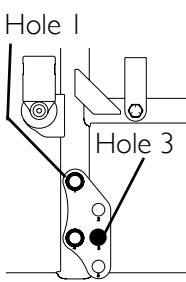
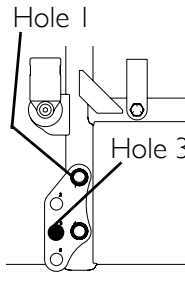
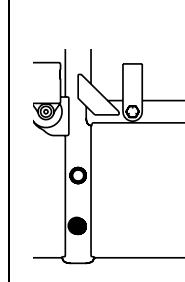
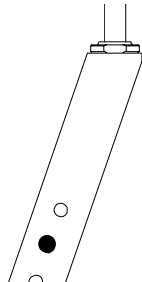
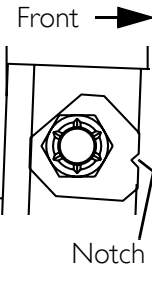
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|-----------------------------------|---|---|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | N/A On-Chair 1113766 Off-Chair |  |  |

Chart 30 - Seat-to-Floor Height of 17½ inches and 3° Angle

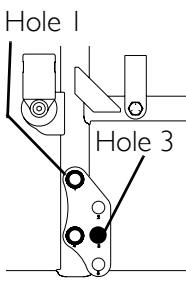
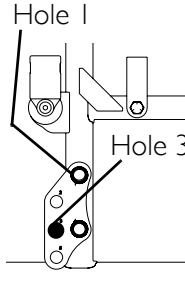
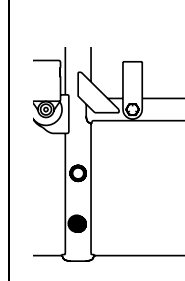
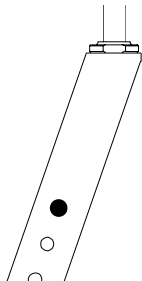
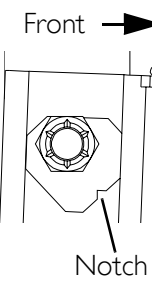
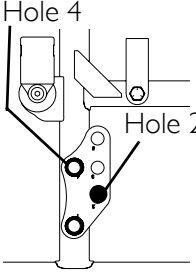
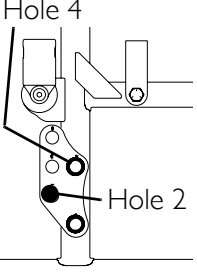
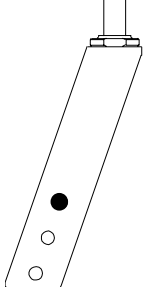
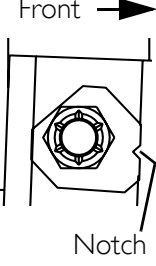
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|------------------------------------|---|---|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | 1360 On-Chair 1058836 Off-Chair |  |  |

Chart 31 - Seat-to-Floor Height of 17½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1113766 Off-Chair |  |  |

20-Inch Rear Wheels and 6-Inch Front Casters**⚠ WARNING**

If changing the seat-to-floor angle to 6°, anti-tippers **MUST be installed.**

Refer to the following table to determine the obtainable seat-to-floor heights and seat-to-floor angles for 20-inch rear wheels and 6-inch front casters:

| SEAT-TO-FLOOR HEIGHT* | SEAT-TO-FLOOR ANGLE | REFER TO |
|--------------------------|------------------------|----------|
| 17½ inches | 3° | Chart 32 |
| 17½ inches | 6° | Chart 33 |
| 16½ inches | 0° | Chart 34 |
| 16½ inches | 3° | Chart 35 |
| 16½ inches | 6° | Chart 36 |
| 15½ inches | 0° | Chart 37 |
| 15½ inches | 3° | Chart 38 |
| 15½ inches | 6° | Chart 39 |

*NOTE: The seat-to-floor heights are based on urethane tires. If wheelchair is equipped with pneumatic (properly inflated) or solid rubber tires, add ¼ inch to the measurements listed above. These heights can vary +/- ¼ inch due to tire wear and manufacturing tolerances.

NOTE: Charts 32 to 39 apply to adult/hemi frame styles only. Refer to the charts for seat-to-floor height settings for adult/tall (Adult/Tall Frame Style on page 31) and super low frame styles (Super Low Frame Style on page 31) and Changing Seat-to-Floor Height on page 77 for recliner frame styles.

Chart 32 - Seat-to-Floor Height of 17½ inches and 3° Angle

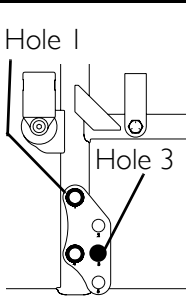
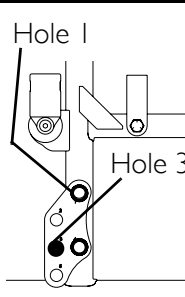
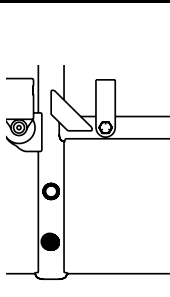
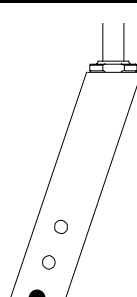
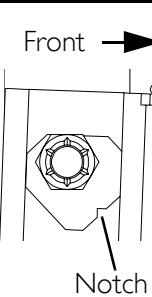
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|-------------------------------------|---|---|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | I360A On-Chair I058752 Off-Chair |  |  |

Chart 33 - Seat-to-Floor Height of 17½ inches and 6° Angle

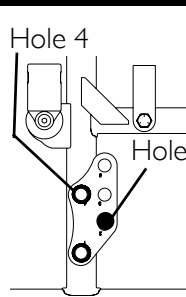
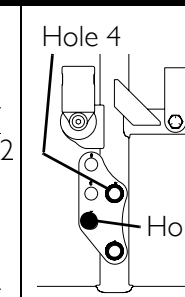

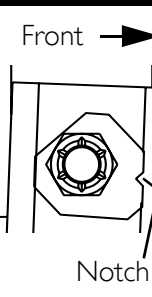
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|--|--|-----------------------------|--------------------------------------|--|--|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair I113765 Off-Chair |  |  |

Chart 34 - Seat-to-Floor Height of 16½ inches and 0° Angle

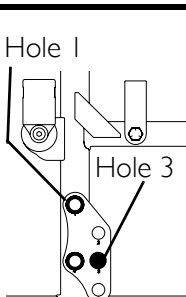
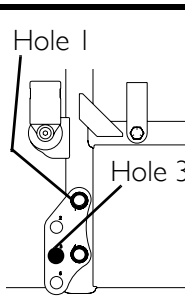
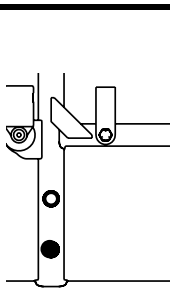
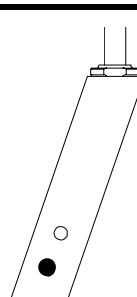
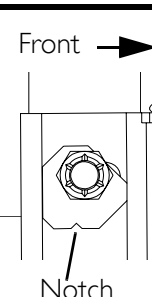
| REAR WHEEL POSITION | | | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|---|-----------------------------------|---|---|
| OFFSET AXLE OPTION | | STANDARD | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | N/A On-Chair I058836 Off-Chair |  |  |

Chart 35 - Seat-to-Floor Height of 16½ inches and 3° Angle

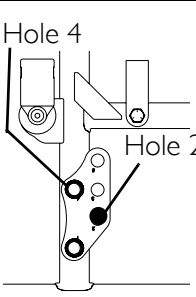
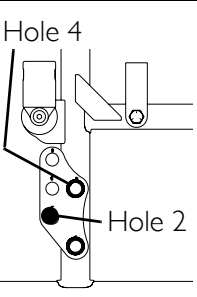
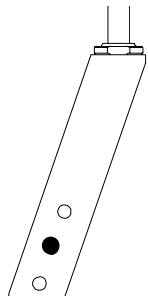
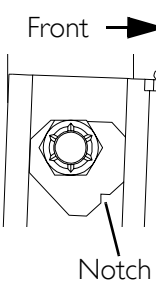
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058752 Off-Chair |  |  |

Chart 36 - Seat-to-Floor Height of 16½ inches and 6° Angle

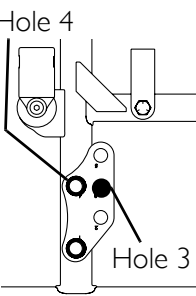
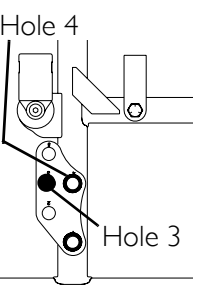
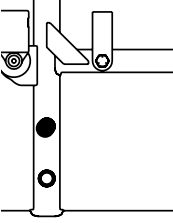
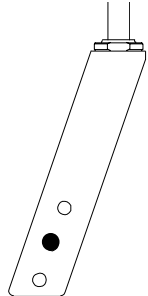
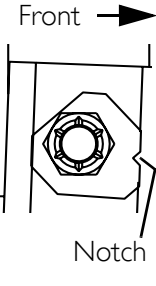
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|--|--|---|--|--|--|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  |  | N/A On-Chair 1113765 Off-Chair |  |  |

Chart 37 - Seat-to-Floor Height of 15½ inches and 0° Angle

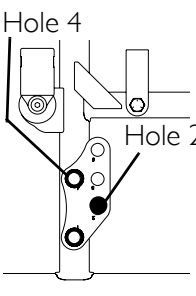
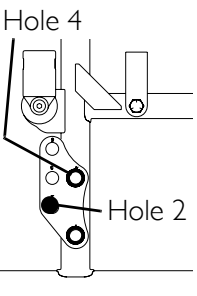
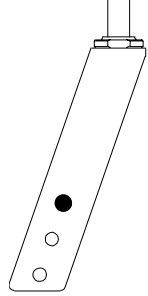
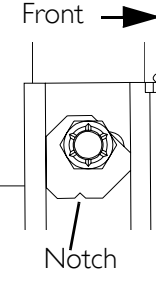
| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---|---|-----------------------------|--|---|---|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
|  |  | N/A for this frame style | N/A On-Chair 1058752 Off-Chair |  |  |

Chart 38 - Seat-to-Floor Height of 15½ inches and 3° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---------------------|----------|----------|--|----------------------|----------------------|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
| | | | I360A On-Chair I058752 Off-Chair | | |

Chart 39 - Seat-to-Floor Height of 15½ inches and 6° Angle

| REAR WHEEL POSITION | | STANDARD | ANTI-TIP PART/MODEL NUMBERS | FRONT CASTER | |
|---------------------|----------|-----------------------------|--|----------------------|----------------------|
| OFFSET AXLE OPTION | | | | MOUNTING POSITION | ADJC CAM POSITION |
| FORWARD | REARWARD | | | | |
| | | N/A for this frame style | N/A On-Chair I113764 Off-Chair | | |

SECTION 6—REAR WHEELS

⚠ 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: Except where noted, the procedures in this section apply to non-recliner models only. For recliner models, refer to Recliner on page 58.

Removing/Installing Rear Wheels

Quick-Release Axles

⚠ WARNING

NEVER use quick-release axles on the 9000 XT (models with offset axle option only), 9000XDT or 9000XT recliner wheelchairs.

NOTE: For this procedure, refer to FIGURE 6.1.

NOTE: If replacing the same size rear wheel, note the mounting position on the wheelchair frame for proper reinstallation of the new rear wheel.

1. Push in the detent pin of the quick-release axle (with wheel) and pull the axle out through the opening in the center of the rear wheel and axle spacer.

NOTE: Axle spacer is used only if wheelchair is equipped with conventional arms.

2. Push in the detent pin of the quick-release axle again and pull the axle out of the rear wheel.
3. Repeat STEPS 1-2 for the opposite rear wheel.
4. To reinstall the rear wheel onto the wheelchair, reverse STEPS 1-3.

NOTE: Make sure axle spacer is between rear wheel and wheelchair frame if wheelchair is equipped with conventional arms.

⚠ WARNING

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

The detent balls **MUST be protruding past the inside of the rear wheel axle bushing for a positive lock (Detail "A").**

Keep detent balls clean.

Invacare recommends inserting quick-release axles with the detent pin to the inside of the wheelchair to prevent accidental release during contact activities.

- If the detent balls are not protruding past the inside of the axle bushing or there is too much side-to-side movement of the rear wheel assembly, refer to the Owner's Manual (part number 1056953) for instructions on adjusting the quick release axle.

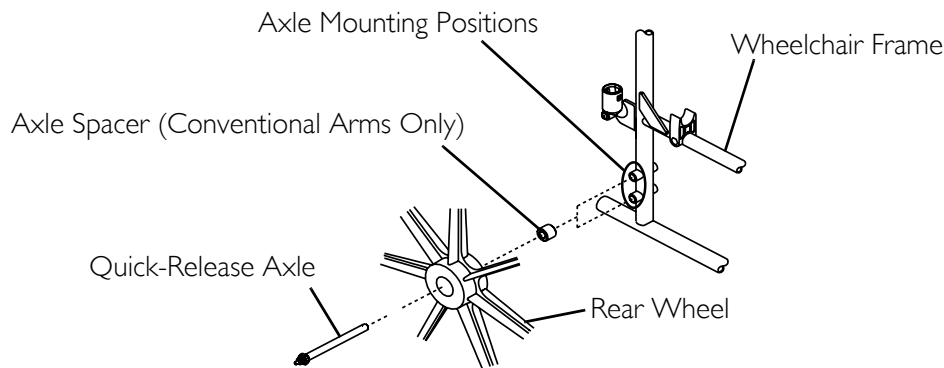
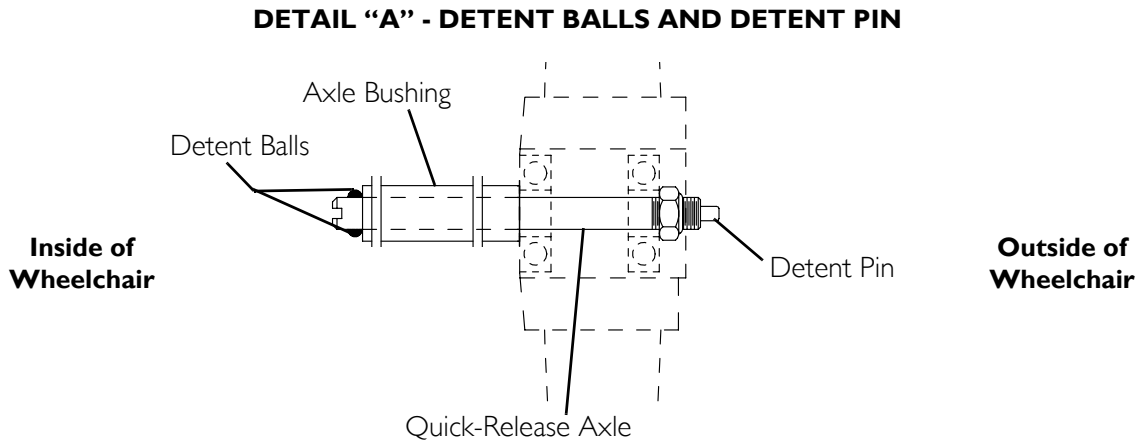


FIGURE 6.1 Removing/Installing Rear Wheels - Quick-Release Axles

Permanent Axles

Models without Offset Axle Option

NOTE: For this procedure, refer to FIGURE 6.2.

NOTE: If replacing the same size rear wheel, note the mounting position on the wheelchair frame for proper reinstallation of the new rear wheel.

- Remove the hub cap (if applicable), mounting screw and locknut that secure the rear wheel and axle spacer (if applicable) to the wheelchair.

NOTE: Axle spacer is used only if wheelchair is equipped with conventional arms.

- To reinstall the rear wheel onto the wheelchair, reverse STEP 1.
- Torque locknut to 40-45 ft-lbs.
- Repeat STEPS 1-3 for the opposite wheel.

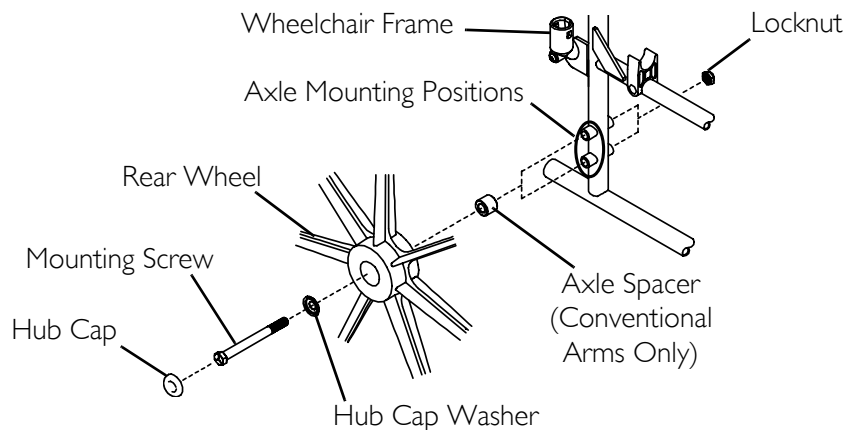


FIGURE 6.2 Removing/Installing Rear Wheels - Permanent Axles - Models without Offset Axle Option

NOTE: Make sure axle spacer is between rear wheel and wheelchair frame if wheelchair is equipped with conventional arms.

Models with Offset Axle Option

NOTE: For this procedure, refer to FIGURE 6.3.

NOTE: If replacing the same size rear wheel, note the mounting position on the wheelchair frame and in the offset axle plates for proper reinstallation of the new rear wheel.

1. Remove hub cap.
2. Remove the locknut securing the permanent axle to the offset axle plates.
3. Remove the permanent axle, hub cap washer, two (2) spacers and rear wheel from the wheelchair.
4. Perform one (1) of the following:
 - Installation In Same Position - Proceed to STEP 5.
 - Installation In Different Position - Perform the following steps:
 - i. Refer to the charts in [Seat to Floor](#) on page 29 to determine the proper mounting position for the desired seat-to-floor height or angle change.

NOTE: The offset axle plates are numbered (Detail "A") on one (1) side only. Axle plates may need positioning with the numbered side to the inside of the wheelchair.

NOTE: The offset axle plates may be mounted in two (2) different positions for each seat-to-floor height/angle setting which allow for a:

- Longer wheelbase - The offset axle plate is positioned so the rear wheel is behind the wheelchair frame.
 - Shorter wheelbase - The offset axle plate is positioned so the rear wheel is in front of the wheelchair frame.
- ii. Remove the two (2) mounting bolts and locknuts securing the offset axle plates to the wheelchair frame.

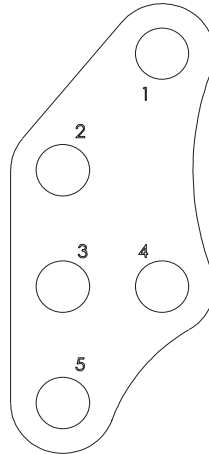
- iii. Position one (1) offset axle plate on the outside of the wheelchair frame in the appropriate position determined in STEP i.
 - iv. Position the second offset axle plate in the same position as the first one, on the inside of the wheelchair frame.
 - v. Install the two (2) mounting bolts and locknuts through hole 1 and hole 4 of both offset axle plates and the frame mounting holes to secure the plates to the wheelchair frame (Detail "A"). Hand tighten.
5. Install the permanent axle through the hub cap washer, rear wheel, two (2) spacers, offset axle plates and offset axle spacer.

⚠ WARNING

The offset axle spacer *MUST* be positioned between the two (2) offset axle plates. Otherwise, injury or damage may occur.

6. Tighten the two (2) locknuts securing the offset axle plates to the wheelchair frame. Torque to 30-35 ft-lbs.
7. Install the locknut onto the permanent axle. Torque to 40-45 ft-lbs.

DETAIL "A" - OFFSET AXLE PLATE MOUNTING POSITIONS



NOTE: The offset axle plates are numbered on one (1) side only. Plates may need positioning with the numbered side to the inside of the wheelchair.

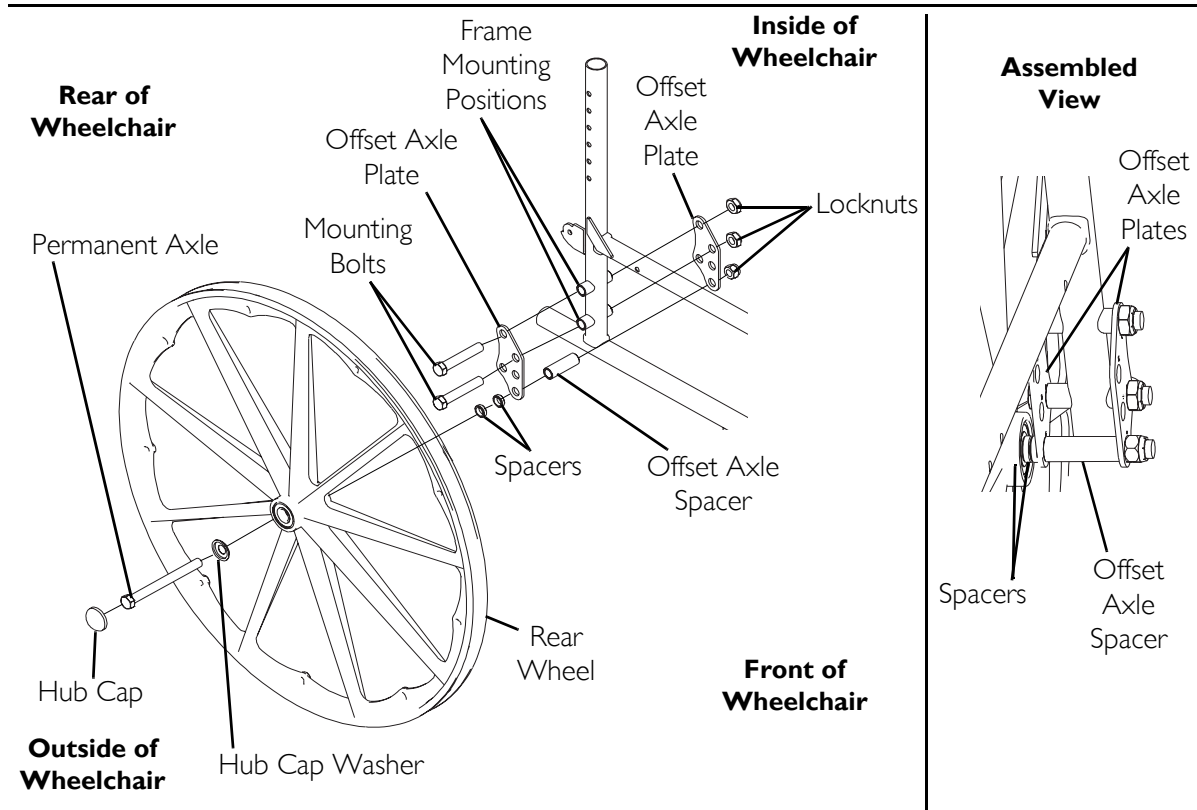


FIGURE 6.3 Removing/Installing Rear Wheels - Permanent Axles - Models with Offset Axle Option

Adjusting Quick-Release Axle

⚠ WARNING

NEVER use quick-release axles on the 9000 XT (models with offset axle option only), 9000XDT or 9000XT recliner wheelchairs.

NOTE: For this procedure, refer to FIGURE 6.4.

1. Remove rear wheel and quick-release axle from the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 52.
2. Depress detent pin in the quick-release axle and slide axle through the rear wheel hub.
3. Release detent pin ensuring that the detent balls are fully released.
4. Increase or decrease end play by adjusting the locknut on the end of the quick-release axle.

⚠ WARNING

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

Keep detent balls clean.

5. Reinstall rear wheel onto the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 52.

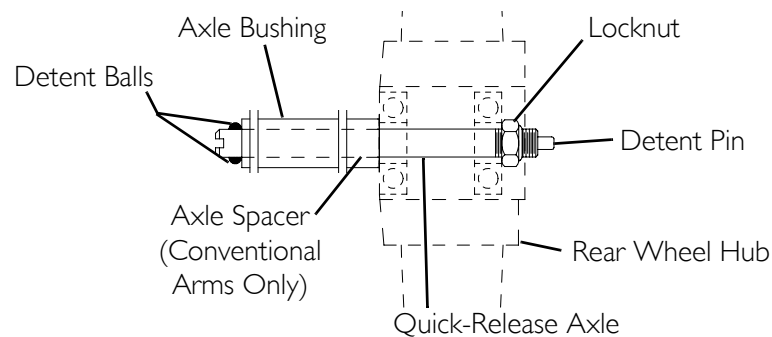


FIGURE 6.4 Adjusting Quick-Release Axle

Adjusting Wheelbase Length

The offset axle plates and the caster headtube may be mounted in two (2) different positions for each seat-to-floor height/angle setting which allow for a:

- Longest Wheelbase - The offset axle plate is positioned so the rear wheel is behind the wheelchair frame. The caster headtube is leading.
- Shortest Wheelbase - The offset axle plate is positioned so the rear wheel is in front of the wheelchair frame. The caster headtube is trailing.

To make these adjustments, refer to [Removing/Installing Rear Wheels](#) on page 52 and/or [Converting from Trailing to Leading or Leading to Trailing Casters](#) on page 27.

SECTION 7—RECLINER

⚠ WARNING

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

ALWAYS make sure that the wheelchair is stable before using the recliner option.

Ensure the spreader bar is attached and secured before using the 9000XT Recliner.

Lift Kit Models Only - Both spring lift mechanisms MUST be operational before using the recliner. DO NOT operate the recliner option if only one (1) of the spring lift mechanisms is operational.

Replacing Release Handle

NOTE: For this procedure, refer to FIGURE 7.1.

1. Rotate the jam nut clockwise and run the jam nut downward to the bottom of the threads.
2. Turn the swivel nut clockwise and run the swivel nut downward to the top of the jam nut.

NOTE: Turning the swivel nut clockwise will push the barrel end of the cable upward.

3. Remove the mounting screw and locknut that secure the release handle to the back tube mounting bracket.
 4. Thread the barrel end of the cable assembly through the larger hole on the existing release handle. See Detail "A".
 5. Remove the existing release handle.
 6. Thread the barrel end of the cable assembly through the larger hole on the new release handle. See Detail "A".
-

⚠ WARNING

When securing the release handle to the back tube mounting bracket, DO NOT overtighten the mounting screw. Overtightening the mounting screw will cause the release handle to jam when squeezed, and the recline mechanism will not disengage, possibly causing injury to the user and/or assistant or damage to the equipment.

7. Secure the new release handle to the back tube mounting bracket with the existing mounting screw and locknut.

NOTE: Tighten until snug fit. DO NOT overtighten.

8. Rotate the swivel nut counterclockwise (upward).
-

NOTE: Turning the swivel nut counterclockwise will pull the barrel end of the cable assembly downward creating tension on the release handle.

9. Rotate the jam nut counterclockwise (upward) directly underneath the swivel nut. Securely tighten.

NOTE: Allow seven (7) threads to be exposed below the jam nut. See Detail "B".

10. Squeeze the release handle and note the amount of play. If the release handle is too loose or too tight, refer to Adjusting Cable Assembly Tension on page 59.

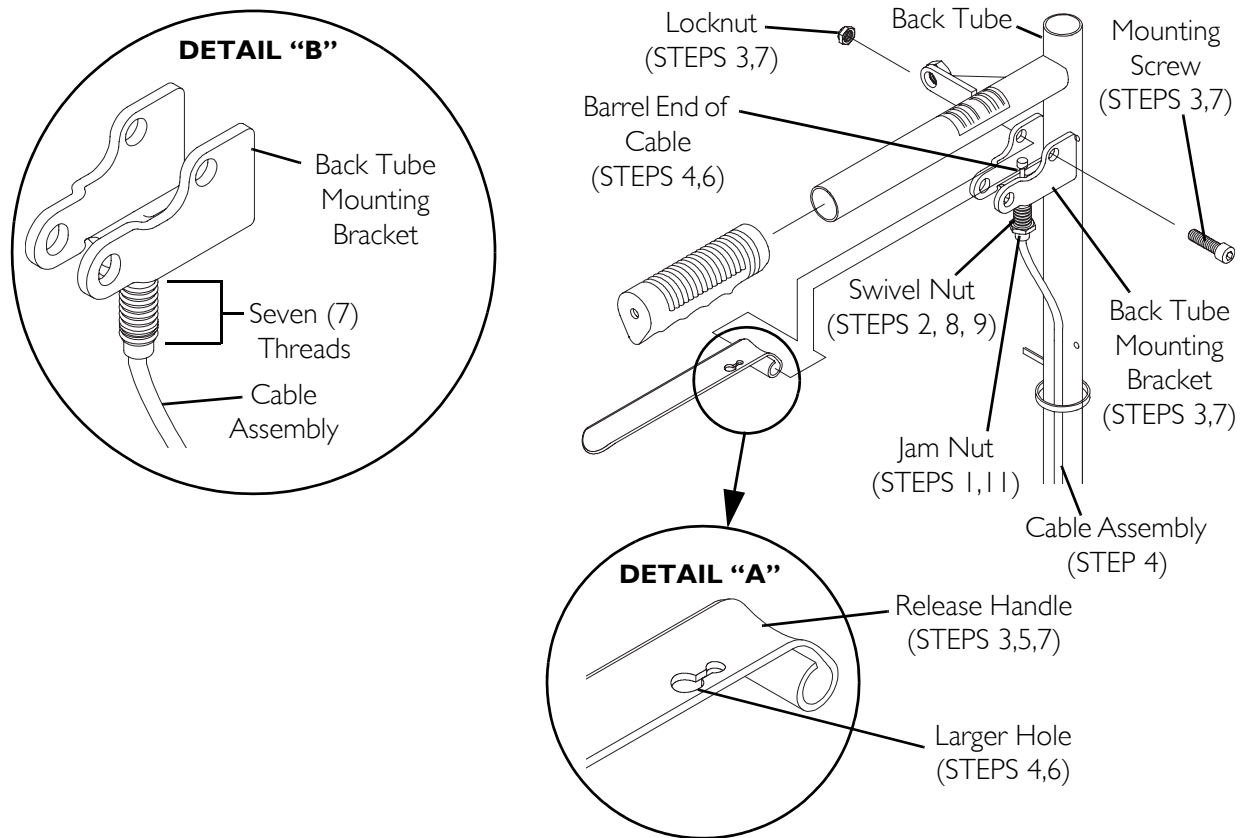


FIGURE 7.1 Replacing Release Handle

Adjusting Cable Assembly Tension

NOTE: For this procedure, refer to FIGURE 7.2.

NOTE: Activation of the recline mechanism depends on proper tension of the cable assembly. Proper tension is defined as the release handle having some resistance when squeezed and firmly held in place when not activated.

NOTE: If the tension of the cable assembly is:

- *Too loose (too much play in release handle) - The recline mechanism will not be activated when the release handle is squeezed.*
- *Too tight (release handle needs more play) - The release handle will be difficult to squeeze.*

1. Perform one (1) of the following:

- If there is too much play in the release handle:
 - i. Rotate the jam nut clockwise (downward) two (2) to three (3) revolutions.
 - ii. Rotate the swivel nut counterclockwise (upward) one (1) revolution.
 - iii. Rotate the jam nut counterclockwise (upward) directly underneath the swivel nut. Securely tighten.
 - iv. Squeeze the release handle and note the amount of play. If necessary, repeat this procedure until the play in the release handle is at minimum.
- If there is not enough play in the release handle:
 - i. Rotate the jam nut clockwise (downward) two (2) to three (3) revolutions.
 - ii. Rotate the swivel nut clockwise (downward) one (1) revolution.
 - iii. Rotate the jam nut counterclockwise (upward) directly underneath the swivel nut. Securely tighten.
 - iv. Squeeze release handle and note the amount of play. If necessary, repeat this procedure until slight play in the release handle occurs.

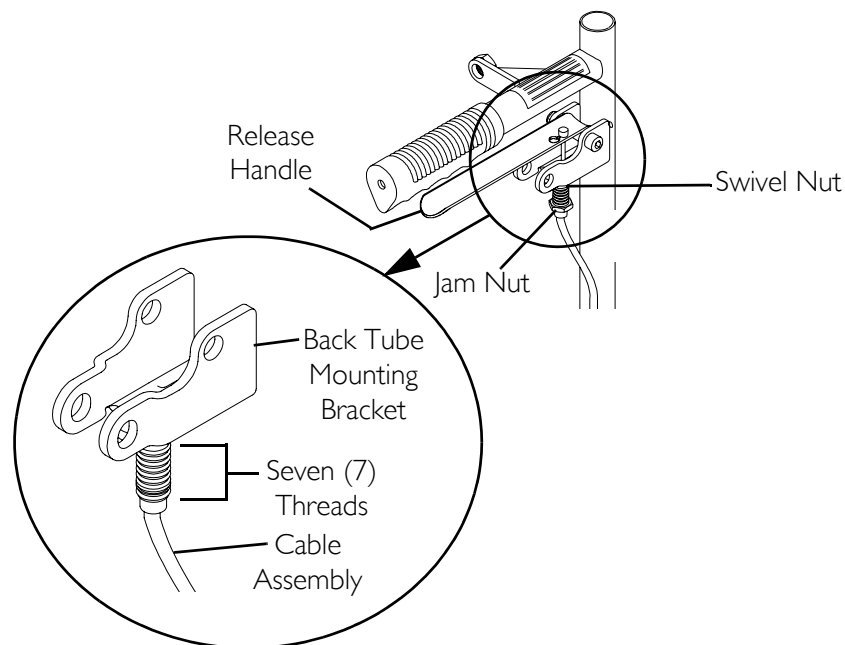


FIGURE 7.2 Adjusting Cable Assembly Tension

Replacing Cable Assembly

NOTE: For this procedure, refer to FIGURE 7.3.

1. Cut the tie-wraps that secure the cable assembly to the back tube.
2. Remove the release handle. Refer to [Replacing Release Handle](#) on page 58.
3. Disconnect the existing lower cable assembly. Refer to [Disconnecting/Connecting Lower Cable Assembly](#) on page 61.

4. Loosen the jam nut, rotate clockwise (downward) and run the jam nut to the bottom of the threads.
5. Hold swivel nut in place and unthread cable assembly from swivel nut. To unthread, rotate clockwise.

NOTE: For proper installation of the new cable assembly, note the number of revolutions required for removing the existing cable assembly.

6. Insert the threaded end of the cable assembly into the existing swivel nut.
7. Hold the swivel nut and rotate the cable assembly counterclockwise (upward) the number of revolutions noted from STEP 5 (approximately ten (10) revolutions).
8. Connect the new lower cable assembly. Refer to [Disconnecting/Connecting Lower Cable Assembly](#) on page 61.
9. Reinstall release handle. Refer to [Replacing Release Handle](#) on page 58.
10. Secure the cable to the back tube with new tie wraps.

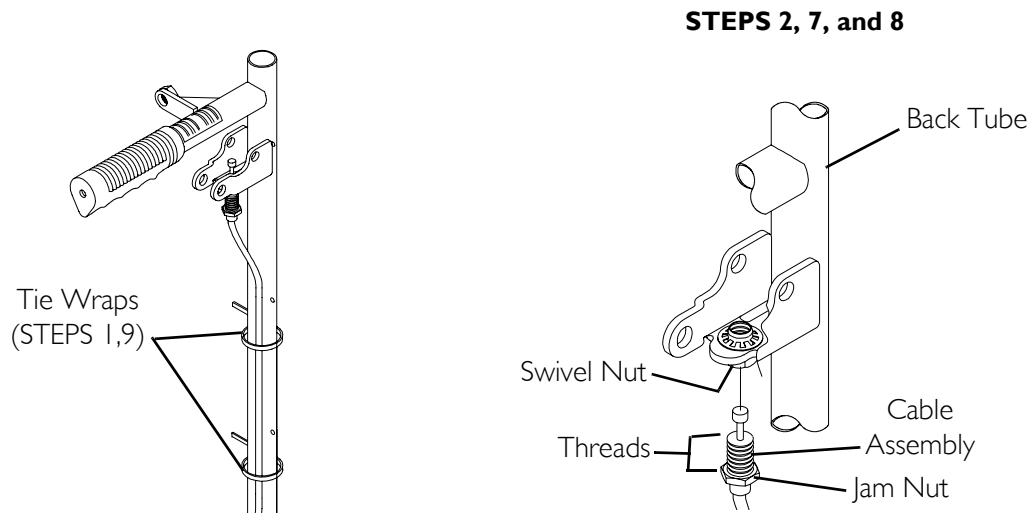


FIGURE 7.3 Replacing Cable Assembly

Disconnecting/Connecting Lower Cable Assembly

NOTE: For this procedure, refer to FIGURE 7.4 on page 63.

Disconnecting

1. Remove the U-bolt and two (2) locknuts that secure the housing and support plate to the recliner tube.

Connecting

1. Lubricate threads of both the threaded sector and the threads of the locking rod (WD-40[®] or equivalent).

2. Align threads of threaded sector with exposed threads of locking rod through cutout in recliner tube.

CAUTION

DO NOT route the cable assembly to the outside of the locking rod/recliner tube assembly as it may rub against the tires.

3. Route cable assembly to the inside of the locking rod/recliner tube assembly.
4. Position U-bolt in middle of support plate.

⚠ WARNING

A 90° angle must be maintained to provide full contact of the threads between the sector and the locking rod (Detail “A”). Otherwise, injury to the user and/or assistant or damage to the equipment may result.

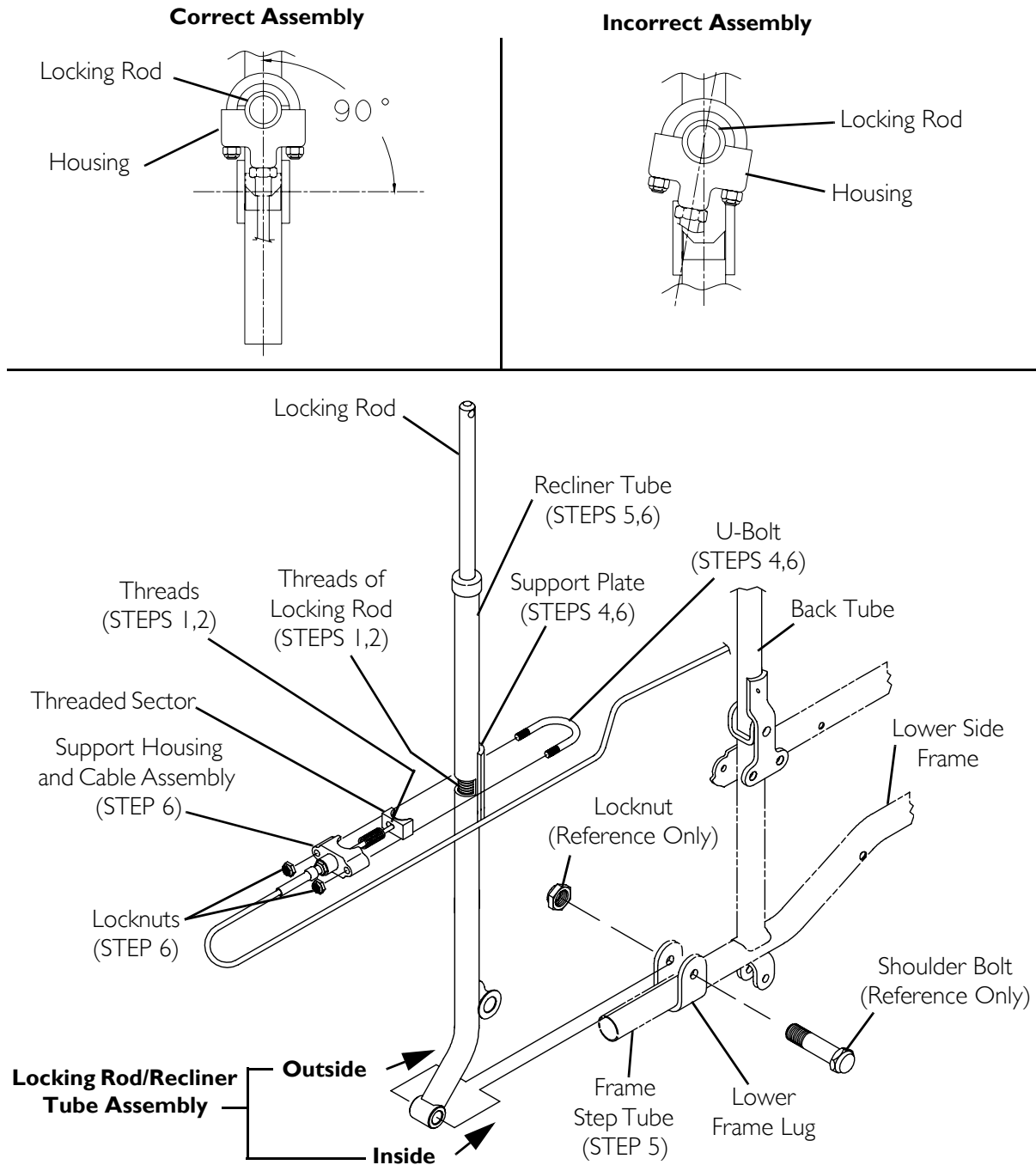
5. When connecting the lower cable assembly to the recliner tube, the housing must be at 90° to the frame step tube.

CAUTION

DO NOT overtighten the locknuts on the U-bolt. Otherwise, damage to the equipment may result.

6. Secure support housing/cable assembly and support plate to recliner tube with existing U-bolt and two (2) locknuts. Torque to 4 ft-lbs. (48 inch-pounds).

DETAIL "A" - TOP VIEW



NOTE: Steps indicated in illustration are for connecting lower cable assembly only.

FIGURE 7.4 Disconnecting/Connecting Lower Cable Assembly

Replacing Threaded Sector

NOTE: For this procedure, refer to FIGURE 7.5.

1. Disconnect the lower cable assembly. Refer to Disconnecting/Connecting Lower Cable Assembly on page 61.
2. Remove the release handle. Refer to Replacing Release Handle on page 58.
3. Remove the existing threaded sector by performing the following:
 - A. Thread the barrel end of the cable through the larger hole on the threaded sector.
 - B. Remove existing threaded sector from housing.
4. Install the new threaded sector:
 - A. Thread barrel end of cable assembly through the larger hole in the new threaded sector.
 - B. Position the barrel end of cable in smaller hole of new threaded sector.
5. Reinstall the release handle. Refer to Replacing Release Handle on page 58.
6. Squeeze the release handle and verify that the cable is activating the threaded sector.
7. If release handle does not activate threaded sector, perform the following:
 - A. Make sure barrel end of cable is positioned in smaller hole of new threaded sector.
 - B. Ensure release handle is installed properly, repeat STEP 7.
 - C. If release handle still does not activate threaded sector, contact Invacare technical support at the number listed on the back cover.
8. Connect the lower cable assembly. Refer to Disconnecting/Connecting Lower Cable Assembly on page 61.

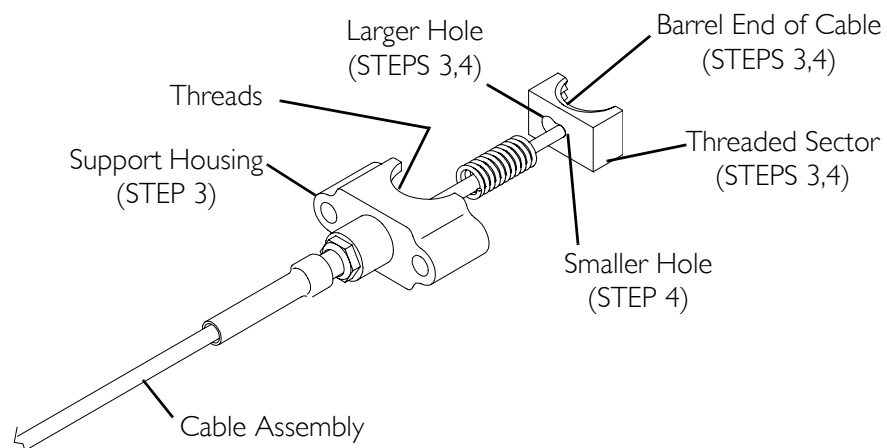


FIGURE 7.5 Replacing Threaded Sector

Replacing Locking Rod

NOTE: For this procedure, refer to FIGURE 7.6.

1. Remove the mounting screw and locknut that secure the locking rod to the back tube mounting bracket.
2. Pull locking rod/recliner tube assembly backward.
3. Remove anti-rattle from locking rod.
4. While holding the locking rod, squeeze release handle.

NOTE: By squeezing the release handle and activating the recline mechanism, the locking rod is released.

5. Pull existing locking rod out of recliner tube assembly.
6. Install new locking rod into the recliner tube.
7. Slide anti-rattle down new locking rod and position on top of the recliner tube assembly.
8. Push locking rod/recliner tube assembly forward.
9. While squeezing the release handle, align the holes of the locking rod with the holes in the back tube mounting bracket.
10. Secure the new locking rod to the back tube mounting bracket with existing mounting screw and locknut. Securely tighten.

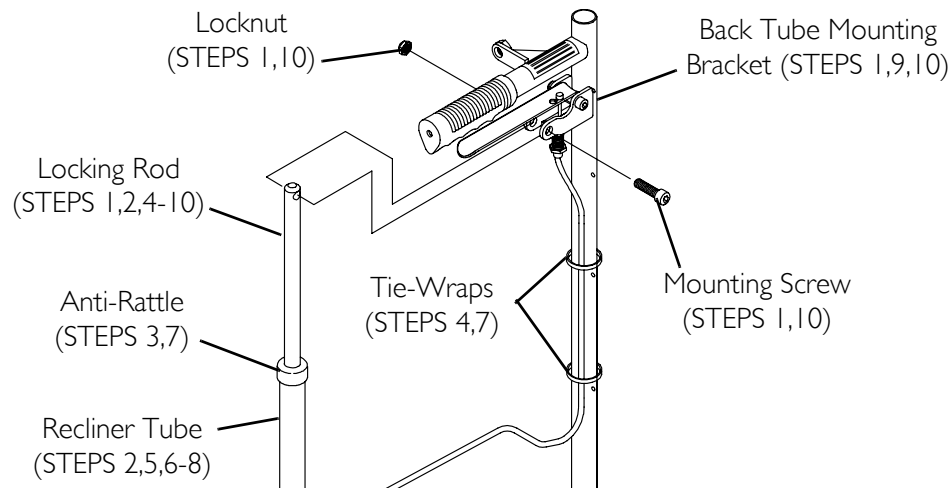


FIGURE 7.6 Replacing Locking Rod

Replacing Back Tube

NOTE: For this procedure, refer to FIGURE 7.7.

1. Remove the spreader bar. Refer to [Storing/Replacing the Spreader Bar](#) in the owner's manual, part number 1056953.

2. Remove the armrests. Refer to Removing/Installing the Armrest in the owner's manual, part number 1056953.
3. If applicable, remove the headrest. Refer to Replacing the Headrest/Back Upholstery in the owner's manual, part number 1056953.
4. Remove the back upholstery. Refer to Replacing the Headrest/Back Upholstery in the owner's manual, part number 1056953.
5. If applicable, remove the spring lift mechanism. Refer to Removing/Installing Spring Lift Mechanism on page 67.
6. Remove the release handle. Refer to Replacing Release Handle on page 58.
7. Disconnect the lower cable assembly. Refer to Disconnecting/Connecting Lower Cable Assembly on page 61.
8. Remove the mounting screw and locknut that secure the locking rod to the back tube mounting bracket.
9. Hold swivel nut in place and unthread cable assembly from swivel nut by rotating cable assembly clockwise.

NOTE: For proper reinstallation, note the number of revolutions required for removing the cable assembly.

10. Remove the mounting screw and locknut that secures the back tube to the clevis bracket.
11. Secure new back tube to clevis bracket with existing mounting screw and locknut. Securely tighten.
12. Insert the threaded end of the cable assembly into the new swivel nut.
13. Hold swivel nut and rotate the cable assembly counterclockwise the number of revolutions noted from STEP 9 (approximately ten (10) revolutions).
14. Secure the locking rod to the back tube mounting bracket with the existing mounting screw and locknut. Securely tighten.
15. Connect the new lower cable assembly. Refer to Disconnecting/Connecting Lower Cable Assembly on page 61.
16. Reinstall the release handle. Refer to Replacing Release Handle on page 58.
17. If applicable, reinstall the spring lift mechanism. Refer to Removing/Installing Spring Lift Mechanism on page 67.
18. Reinstall the back upholstery. Refer to Replacing the Headrest/Back Upholstery in the owner's manual, part number 1056953.
19. Reinstall the armrest. Refer to Removing/Installing the Armrest in the owner's manual, part number 1056953.
20. If applicable, reinstall the headrest. Refer to Replacing the Headrest/Back Upholstery in the owner's manual, part number 1056953.
21. Reinstall the spreader bar. Refer to Storing/Replacing the Spreader Bar in the owner's manual, part number 1056953.

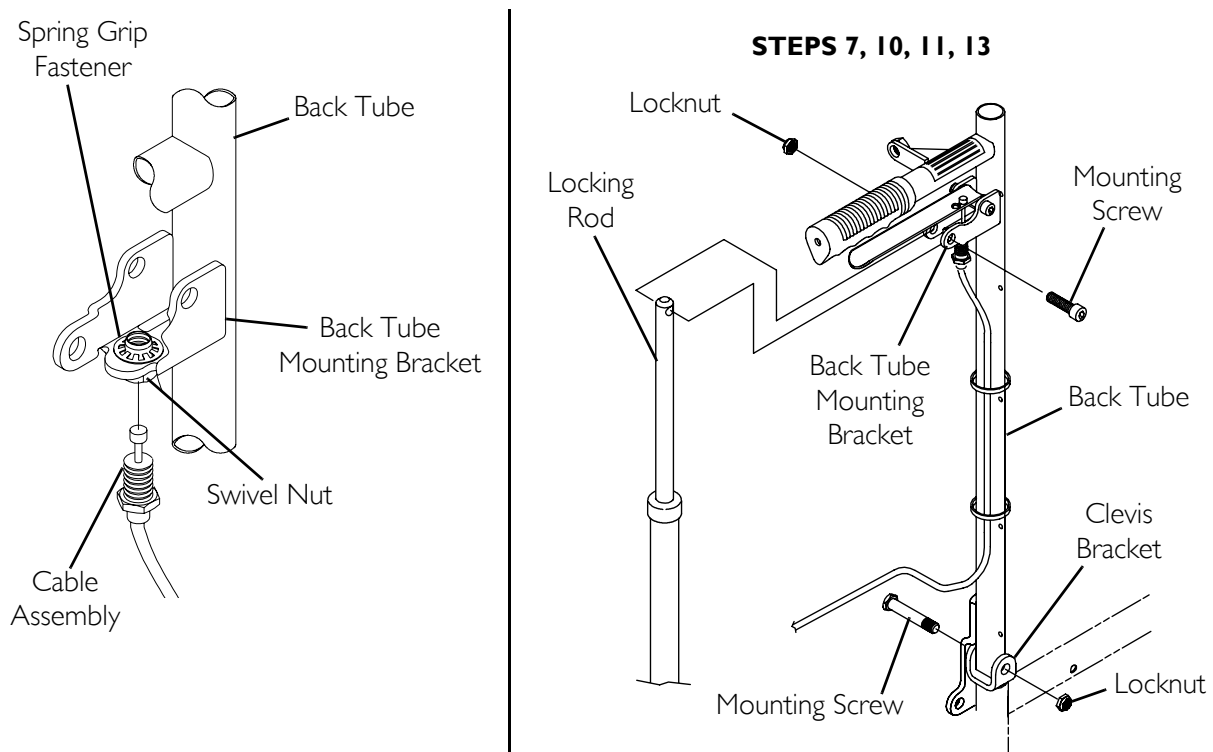


FIGURE 7.7 Replacing Back Tube

Removing/Installing Spring Lift Mechanism

NOTE: For this procedure, refer to FIGURE 7.8.

Removing

1. Recline the wheelchair exposing the two (2) holes on either side of the spring lift mechanism.

NOTE: Before removing the spring lift mechanism, a retaining clip must be installed to prevent the spring lift mechanism from compressing. The retaining clip, part number 1021688, can be purchased from Invacare at the number listed on the back cover.

2. Position one (1) end of the retainer clip in each of the holes.
3. Return chair to upright position until top portion of lift mechanism rests on the retaining clip.
4. Remove the locknut that secures the top of the spring lift mechanism to the wheelchair frame.
5. Remove the mounting screw, spacer, and locknut that secures the bottom of the spring lift mechanism to the wheelchair frame.
6. Remove existing spring lift mechanism.

Installing

CAUTION

DO NOT remove the retaining clip before the spring lift mechanism is secured to the wheelchair. If the retaining clip is removed, the spring lift mechanism will compress. This will make the spring lift mechanism unusable.

NOTE: If installing a new spring lift mechanism, assembly is shipped with retaining clip attached.

1. Install spring lift mechanism.
2. Install the mounting screw, spacer, and locknut that secures the bottom of the spring lift mechanism to the wheelchair frame.
3. Install the locknut that secures the top of the spring lift mechanism to the wheelchair frame.

CAUTION

DO NOT overtighten the attaching hardware of the spring lift mechanism. Otherwise, damage may occur.

4. Tighten both locknuts from STEPS 2-3 until one (1) to two (2) full threads are exposed.
5. Remove retaining clip.

NOTE: If retaining clip can not be removed, contact Invacare technical support at the number listed on the back cover.

6. Return wheelchair to normal position.

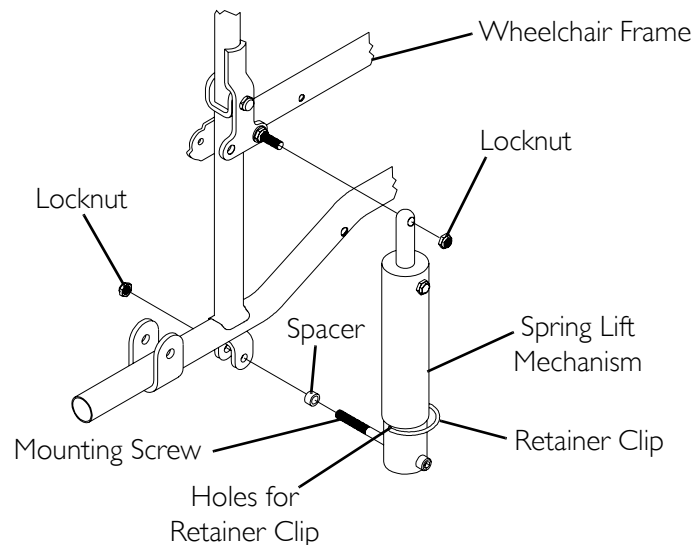


FIGURE 7.8 Removing/Installing Spring Lift Mechanism

Replacing Recliner Tube

NOTE: For this procedure, refer to FIGURE 7.9.

1. Remove the mounting screw and locknut that secure the locking rod to the back tube mounting bracket.
2. Slide anti-rattle up and off of locking rod.
3. If applicable, perform the following:
 - A. Loosen the bolt and locknut that secure the attendant operated wheel lock to the recliner tube.
 - B. Slide the attendant operated wheel lock up and off of the locking rod.
4. Disconnect the lower cable assembly. Refer to Disconnecting/Connecting Lower Cable Assembly on page 61.
5. Remove locking rod from existing recliner tube.
6. Remove the rear wheel. Refer to Removing/Installing Rear Wheels on page 75.
7. Remove the shoulder bolt and locknut that secure the lower portion of the recliner tube to the wheelchair frame.
8. Secure lower portion of the new recliner tube to wheelchair frame with existing shoulder bolt and locknut. Securely tighten.
9. Install existing locking rod into new recliner tube.
10. If applicable, perform the following:
 - A. Slide the new attendant operated wheel lock down locking rod and onto the recliner tube.
 - B. Position the attendant operated wheel lock above the cutout in the recliner tube and tighten the bolt and locknut.
11. Reposition the anti-rattle onto the recliner tube.
12. Re-secure the locking rod to the back tube mounting bracket with the existing mounting screw and locknut. Securely tighten.
13. Reconnect lower cable assembly. Refer to Disconnecting/Connecting Lower Cable Assembly on page 61.
14. Reinstall the rear wheel. Refer to Removing/Installing Rear Wheels on page 75.
15. If applicable, adjust the attendant operated wheel lock. Refer to Using/Adjusting the Wheel Locks in the owner's manual, part number 1056953.

STEPS 3 and 10

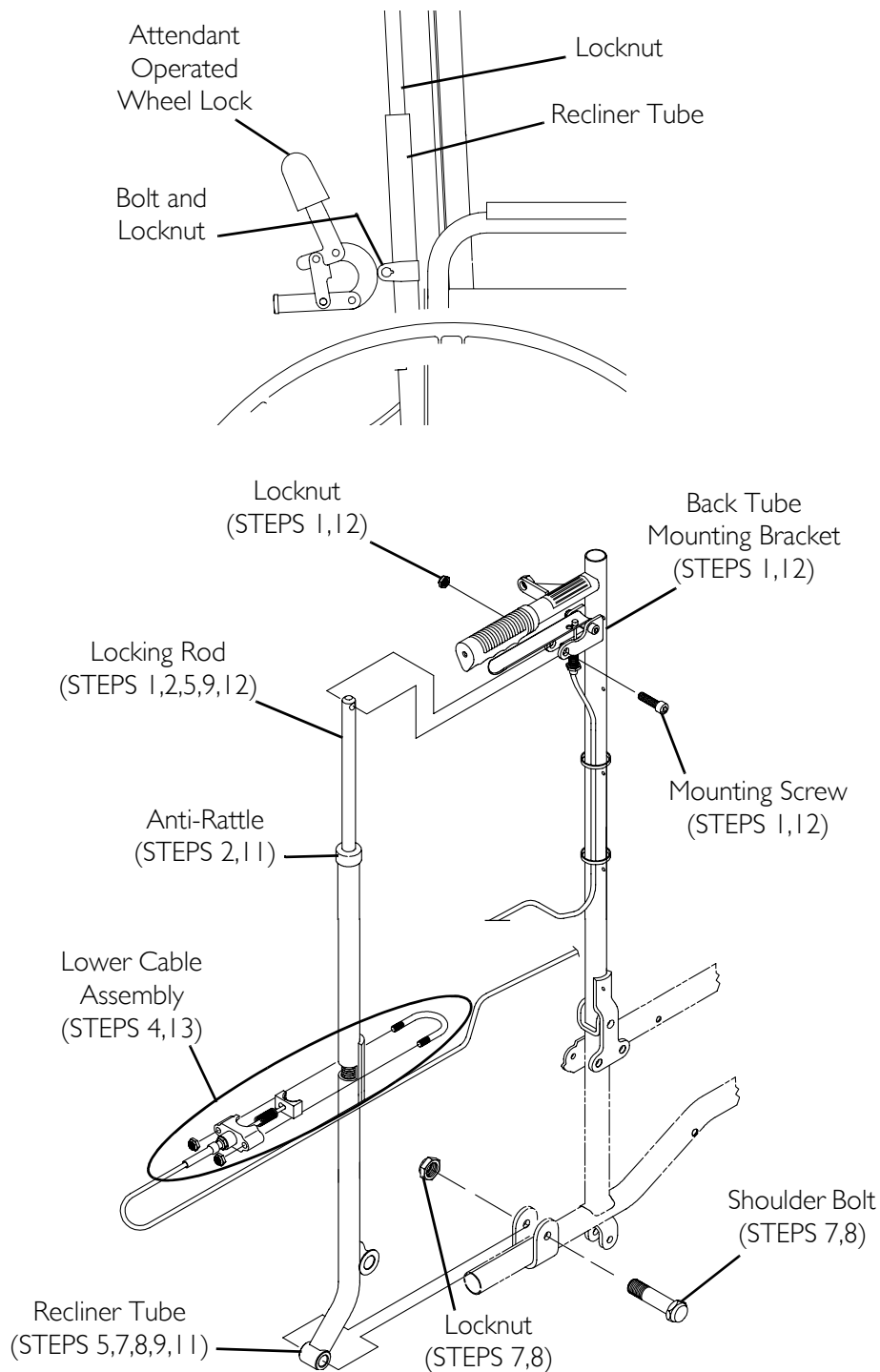


FIGURE 7.9 Replacing Recliner Tube

Adjusting Seat Width

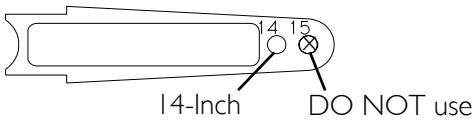
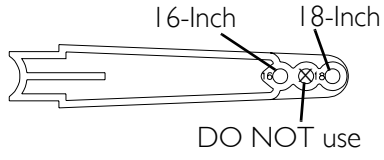
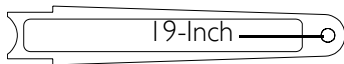
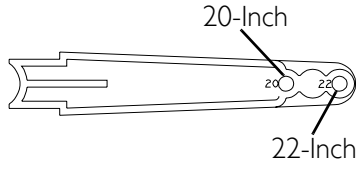
NOTE: For this procedure, refer to FIGURE 7.10 on page 73.

NOTE: When adjusting the seat width of the wheelchair, the back and seat upholstery, and spreader bar MUST be changed. If applicable, the headrest pillow and headrest upholstery MUST be changed as well.

1. If applicable, remove the headrest pillow. Refer to Replacing the Headrest Pillow in the owner's manual, part number 1056953.
2. If applicable, remove the headrest upholstery. Refer to Replacing the Headrest/Back Upholstery in the owner's manual, part number 1056953.
3. Remove the spreader bar. Refer to Storing/Replacing the Spreader Bar in the owner's manual, part number 1056953.
4. Remove the existing back and seat upholstery from the wheelchair. Refer to Replacing the Headrest/Back Upholstery and Replacing the Seat Upholstery in the owner's manual, part number 1056953.
5. Remove the button screws and locknuts that secure the two (2) pivot links to the wheelchair frame and crossbraces.
6. Remove the two (2) button screws, locknuts and crossbrace saddle that secures the bottom of the crossbrace to the wheelchair frame. Repeat for other crossbrace.
7. Remove the hex screw, coved washers, washers and locknut that secure the two (2) crossbraces together. See Detail "B" of FIGURE 7.10.

NOTE: Make note of the orientation of the coved washers, washers and locknut for assembling the new crossbraces. See Detail "B" of FIGURE 7.10.

8. Assemble the two (2) new crossbraces with the existing hex screw, coved washers, washers and locknut. Securely tighten. Refer to Detail "B" of FIGURE 7.10 for hardware orientation.
9. Determine the correct pivot link and mounting hole to use with the desired seat width. Refer to the following chart.

| SEAT WIDTH | PIVOT LINK |
|--------------------|--|
| 14-INCH |  |
| 16-INCH 18-INCH |  |
| 19-INCH |  |
| 20-INCH 22-INCH |  |

10. Secure the pivot link to the crossbraces and wheelchair frame with the four (4) button screws and locknuts. Securely tighten.
11. Reinstall the two (2) button screws, locknuts and crossbrace saddle that secure the bottom of the new crossbrace to the wheelchair frame. Repeat for opposite crossbrace. Securely tighten.

NOTE: Position crossbrace saddle on wheelchair frame using the washer on the underside of the wheelchair frame as a reference. See Detail "A" of FIGURE 7.10 for proper positioning of the crossbrace saddle.

12. Install the new back and seat upholstery onto the wheelchair. Refer to Replacing the Headrest/Back Upholstery and Replacing the Seat Upholstery in the owner's manual, part number 1056953.

NOTE: There are three (3) lengths of spreader bars—one (1) for each of the following groupings: 14-inch wide chairs, 16 to 19-inch wide chairs, and 20, 22-inch wide chairs. All spreader bars install in the same manner.

13. Install the correct length spreader bar for the desired chair width. Refer to Storing/Replacing the Spreader Bar in the owner's manual, part number 1056953.
14. If applicable, reinstall the headrest upholstery. Refer to Replacing the Headrest/Back Upholstery in the owner's manual, part number 1056953.
15. If applicable, reinstall the headrest pillow. Refer to Replacing the Headrest Pillow in the owner's manual, part number 1056953.

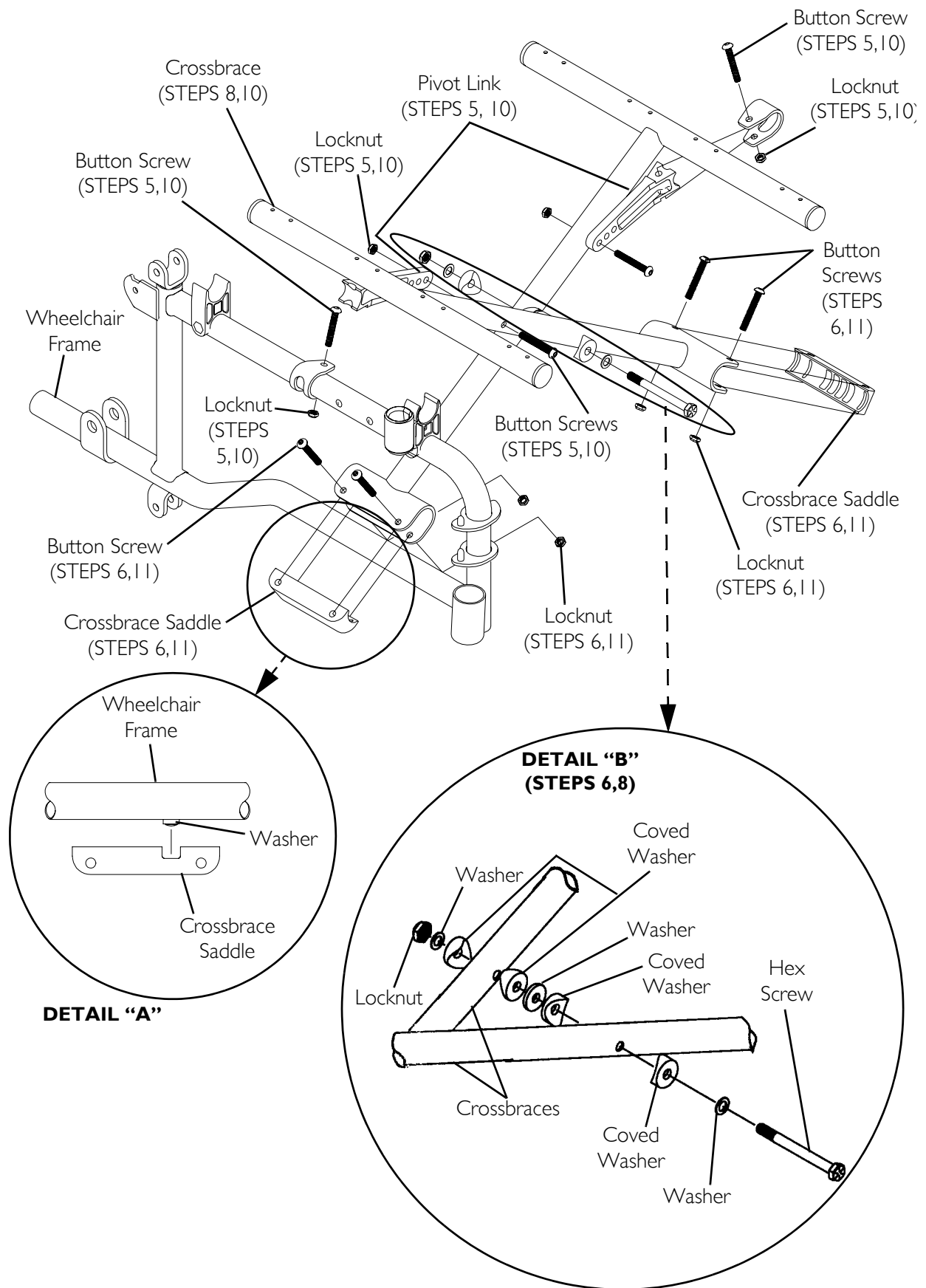


FIGURE 7.10 Adjusting Seat Width

Adjusting Seat Depth

NOTE: For this procedure, refer to FIGURE 7.11.

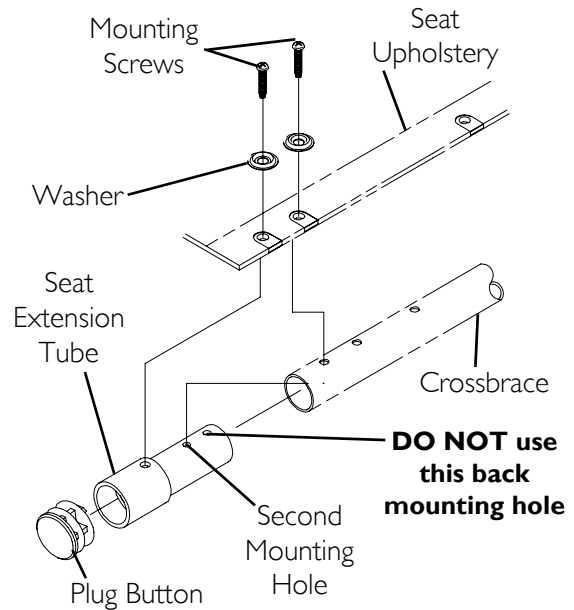
1. Remove the existing seat upholstery from the crossbraces. Refer to Replacing the Seat Upholstery in the Owner's Manual, part number 1056953.

*NOTE: When adjusting the seat depth of the wheelchair, the seat upholstery **MUST** be changed as well.*

2. Remove the two (2) plug buttons from the ends of the crossbraces that are towards the front of the wheelchair.

NOTE: DO NOT use back mounting hole shown in FIGURE 7.11. If back mounting hole is used, the mounting hole for the other mounting screw will not line up properly.

3. Install the two (2) seat extension tubes into the ends on the crossbraces.
4. Line up the second mounting hole from the rear of the seat extension tube with the mounting hole in the crossbrace. Repeat for opposite seat extension tube.
5. Install the new seat upholstery onto the wheelchair. Make sure to line up the mounting holes in the seat extension tubes with the new seat upholstery. Refer to Replacing the Seat Upholstery in the Owner's Manual, part number 1056953.
6. Install plug buttons into the ends of the seat extension tubes.



NOTE: This illustration depicts the 1-inch seat extension. The 2-inch seat extension attaches in the same manner.

FIGURE 7.11 Adjusting Seat Depth

Removing/Installing Rear Wheels

With Patient Operated Wheel Locks

NOTE: For this procedure, refer to FIGURE 7.12.

1. Remove the axle mounting screw and locknut that secure the patient operated wheel lock, spacers, and rear wheel to the wheelchair frame.
2. Secure rear wheel, patient operated wheel lock, and spacers to wheelchair frame with axle mounting screw and locknut. Torque locknut to 40-50 ft./lbs.

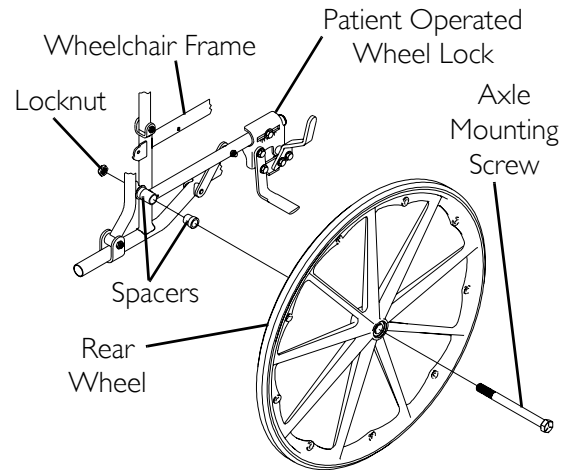


FIGURE 7.12 Removing/Installing Rear Wheels - With Patient Operated Wheel Locks

With Attendant Operated Wheel Locks

NOTE: For this procedure, refer to FIGURE 7.13.

1. Remove the axle mounting screw and locknut that secure the rear wheel and spacer to the wheelchair frame.
2. Remove rear wheel from side frame.
3. Secure rear wheel and spacer to wheelchair frame with axle mounting screw and locknut. Torque locknut to 40-50 ft./lbs.

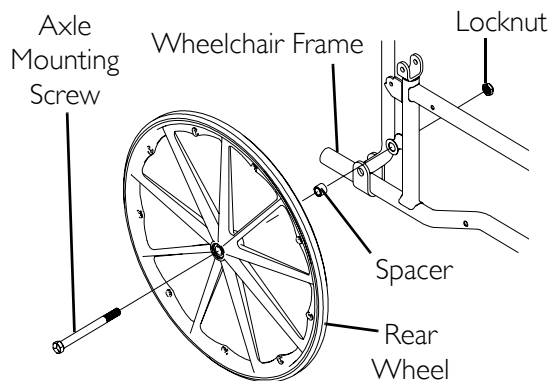


FIGURE 7.13 Removing/Installing Rear Wheels - With Attendant Operated Wheel Locks

Using/Adjusting Wheel Locks

NOTE: For Using and/or Adjusting of Patient Operated Wheel Locks, refer to Using/Adjusting Disk Wheel Locks on page 82.

Using Attendant Operated Wheel Locks

⚠ WARNING

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

NOTE: For this procedure, refer to FIGURE 7.14.

1. Perform one (1) of the following:
 - Engage - Apply pressure downward on wheel lock handle.
 - Disengage - Lift up on wheel lock handle.

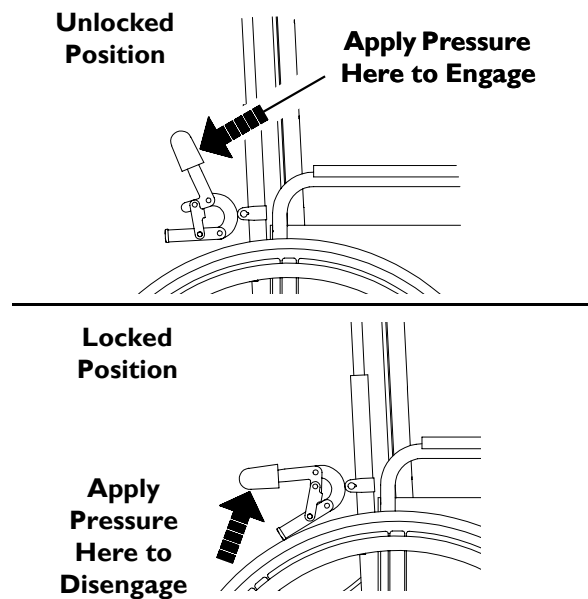


FIGURE 7.14 Using Attendant Operated Wheel Locks

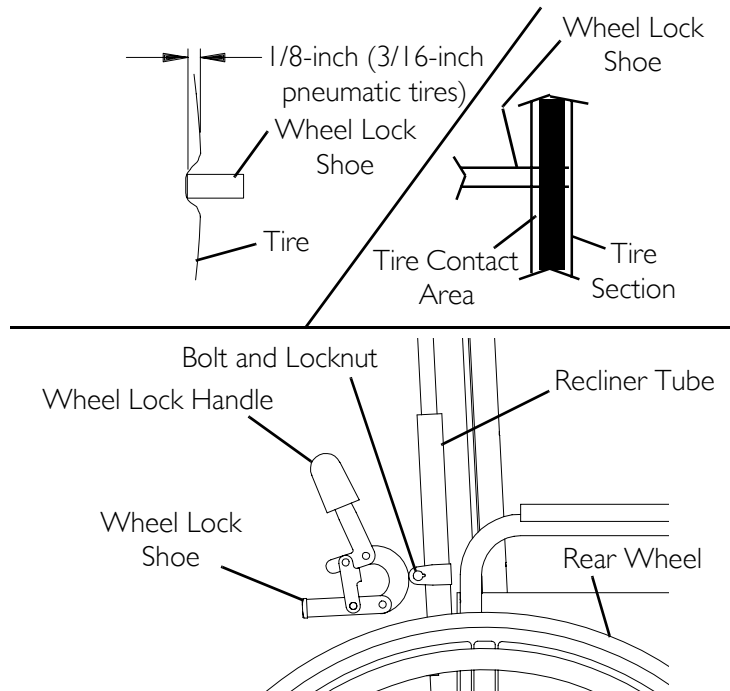
Adjusting Attendant Operated Wheel Locks

NOTE: For this procedure, refer to FIGURE 7.15.

NOTE: If wheels are pneumatic, before adjusting or replacing the wheel lock assemblies, ensure that the tires are inflated to the recommended psi located on the side wall of tire.

1. Loosen the bolt and locknut that secure the wheel lock to the recliner tube.
2. Adjust the position of wheel lock so that when engaged, the wheel lock shoe embeds the tire 1/8-inch (3/16-inch for pneumatic tires) and holds the wheelchair.
3. Securely tighten the bolt and locknut.
4. Engage wheel lock and push against the wheelchair and determine if wheel lock engages the wheel lock shoe enough to hold the wheelchair.
5. Repeat the above procedures until the wheel lock holds the wheelchair.
6. Repeat STEPS 1-5 for the opposite wheel lock.

NOTE: Ensure the wheel lock shoe completely covers the tire contact area. See Detail "A" for proper positioning of wheel lock shoe.

DETAIL "A" - WHEEL LOCK SHOE ENGAGEMENT**FIGURE 7.15** Adjusting Attendant Operated Wheel Locks

Changing Seat-to-Floor Height

NOTE: For this procedure, refer to FIGURE 7.16.

1. Remove the rear wheels. Refer to [Removing/Installing Rear Wheels](#) on page 75.
2. If necessary, adjust the front caster position in the fork. Refer to [Front Caster Mounting Adjustments](#) on page 26.
3. Reinstall the rear wheels onto the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 75.
4. Adjust the wheel locks. For attendant operated wheel locks, refer to [Using/Adjusting the Wheel Locks](#) in the recliner section or for patient operated wheel locks, refer to [Using/Adjusting the Patient Operated Wheel Locks](#) in the Owner's Manual, part number 1056953.

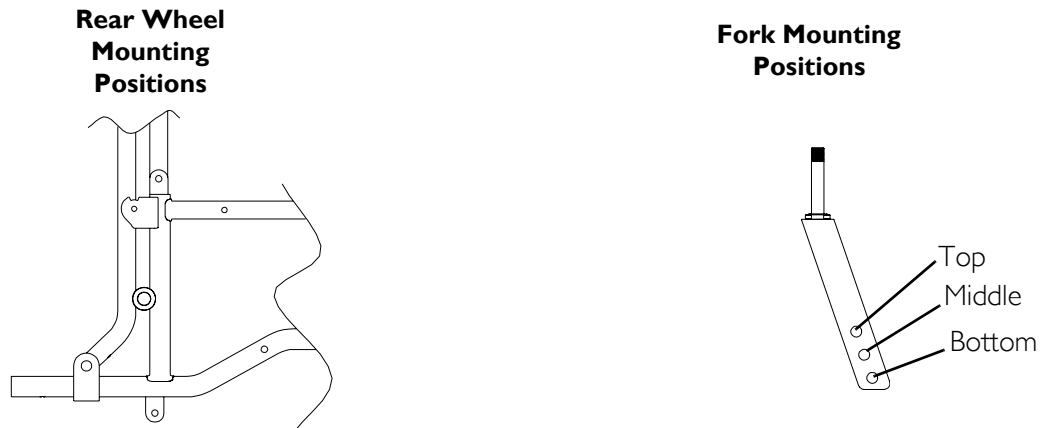
⚠ WARNING

After changing the seat-to-floor height, the anti-tippers **MUST be replaced before using the wheelchair. Refer to [Installing Anti-Tippers](#) on page 78.**

5. Refer to the following table of rear wheel sizes to determine adjustments for obtainable seat-to-floor heights.

8-inch Front Casters

| SEAT-TO-FLOOR HEIGHT (INCHES) | FRONT CASTER MOUNTING POSITION | REAR WHEEL SIZE | REAR WHEEL MOUNTING POSITION |
|-------------------------------|--------------------------------|-----------------|------------------------------|
| 17½ | Top | 20-inch | N/A |
| 18½ | Middle | 22-inch | N/A |
| 19½ | Bottom | 24-inch | N/A |

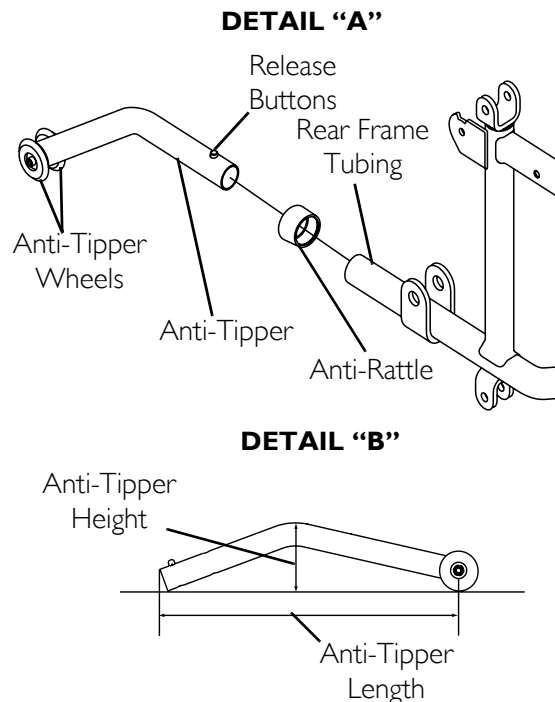
**FIGURE 7.16** Changing Seat-to-Floor Height

Installing Anti-Tippers

NOTE: For this procedure, refer to FIGURE 7.17.

1. Install the anti-rattles onto the rear frame tubes if not already in place.
2. Position the anti-tippers with the anti-tipper wheels pointing toward the ground/floor.
3. Press the release buttons.
4. Insert the anti-tippers into the rear frame tubing until the bottom release button locks in place.

*NOTE: Refer to the following charts to ensure the correct anti-tipper is installed in the wheelchair. Seat-to-floor heights are approximate depending on front caster type. The anti-tipper height measurement **MUST** be taken with the anti-tipper on a flat surface.*

**FIGURE 7.17** Installing Anti-Tippers

| 9000 XT RECLINER | | | | |
|---------------------------|-------------------------|-------------------------------|----------|-------------------------|
| WHEEL SIZE REAR/CASTER | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH, HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 24/8-inch | 19½ | 11½, 2½-inches | 1021767 | 1021767 |
| 22/8-inch | 18½ | 10¼, 1-7/8-inches | 1061110 | 1061110 |
| 20/8-inch | 17½ | 10, 1½-inches | 1061109 | 1061109 |

SECTION 8—ANTI-TIPPERS/WHEEL LOCKS

⚠ 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: The procedures in this section apply to non-recliner models only except where noted. For the 9000XT recliner, refer to Recliner on page 58.

Installing/Adjusting Anti-tippers

⚠ WARNING

Anti-tippers are specific to the different seat-to-floor angles and/or seat-to-floor heights. Refer to the chart on page 81 for correct usage and adjustment. If these requirements cannot be achieved, DO NOT use the wheelchair. Contact a qualified technician. If changing the seat-to-floor height with or without a change to seat-to-floor angle, the correct anti-tippers **MUST be used to maintain a 1-1/2 to 2-inch ground clearance.**

Seat-to-floor angle of 0° or 3°: If so equipped, anti-tippers **MUST be attached at all times. Inasmuch as the anti-tippers are an option for 0° or 3° on this wheelchair (you may order with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as a safeguard for the wheelchair user.**

Seat-to-floor angle of 6°: If changing the seat-to-floor angle to 6°, anti-tippers **MUST be ordered and installed.**

Anti-tippers **MUST be fully engaged and release buttons fully protruding out of adjustment holes.**

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 tipover. Extra caution must be observed when traversing such surfaces.

Ensure both anti-tippers are adjusted to the same mounting hole.

Installing Anti-Tippers

NOTE: For this procedure, refer to FIGURE 8.1.

1. Remove plug button (not shown) from end of rear frame tubing and install anti-rattles if not already installed.
2. Press the release buttons in and insert the anti-tippers with the anti-tipper wheels pointing toward the ground/floor into the rear frame tubing until the bottom release button locks in place.

3. Measure the distance between the bottom of the anti-tipper wheels and the ground/floor.

NOTE: A 1½ to 2-inch clearance between the bottom of the anti-tipper wheels and the ground/floor MUST be maintained at all times.

4. If the distance between the bottom of anti-tipper wheels and the ground/floor is not 1½ to 2-inches, adjust anti-tippers. Refer to [Adjusting Anti-Tippers](#) on page 81.

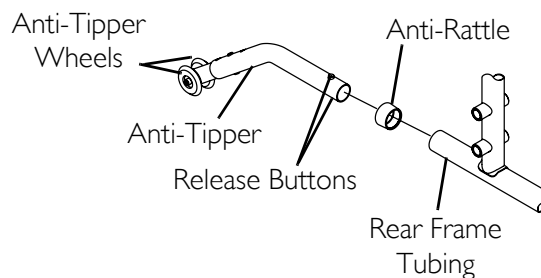


FIGURE 8.1 Installing Anti-Tippers

Adjusting Anti-Tippers

NOTE: For this procedure, refer to FIGURE 8.2.

1. Press the release buttons on the wheeled portion of the anti-tipper and slide it up or down to achieve the 1-1/2 to 2-inch clearance (Detail "A").
2. Check to make sure that the release buttons are fully engaged in adjustment holes.

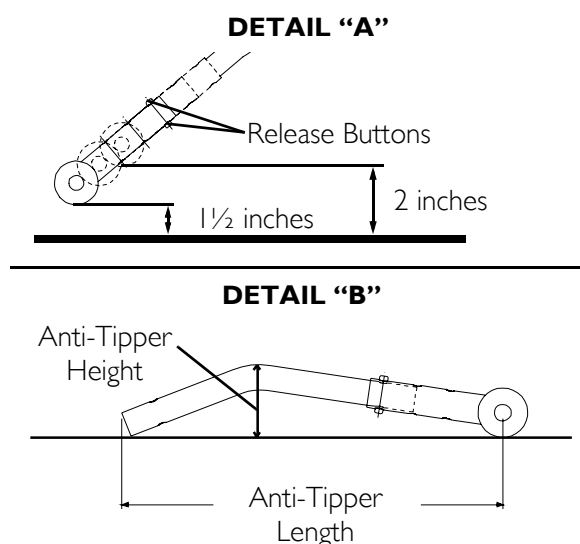


FIGURE 8.2 Adjusting Anti-Tippers

NOTE: Refer to Detail "B" in FIGURE 8.2 and to the following charts to ensure the correct anti-tipper is installed on the wheelchair. Seat-to-floor heights are approximate depending on front caster size and type. Refer to [Changing Seat-to-Floor Height/Seat-to-Floor Angle](#) on page 29 for an explanation of frame times. Anti-Tipper length measurement is taken with the extension tube in the longest position available. The anti-tipper height measurement MUST be taken with the anti-tipper on a flat surface.

| 9000 XT (SUPER LOW FRAME) | | | | |
|---------------------------|----------------------|---------------------------|----------|----------------------|
| CASTER SIZE | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH/HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 6-inch | 13½ and 14½ inches | 10½ / 2-inches | I360SH | 1064520 |

| 9000 XDT (ADULT TALL FRAME) | | | | |
|-----------------------------|----------------------|---------------------------|----------|----------------------|
| CASTER SIZE | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH/HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 8-inch | 17½ and 19½ inches | 11-5/8 / 2-3/4-inches | I360A | 1058752 |

| 9000 XDT (ADULT TALL FRAME) | | | | |
|-----------------------------|----------------------|---------------------------|----------|----------------------|
| CASTER SIZE | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH/HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 8-inch | 21½-inches | 13½ / 3½-inches | 1360 | 1058836 |

| 9000 XT WITH 0° SEAT-TO-FLOOR ANGLE (ADULT/HEMI FRAME) | | | | |
|--|----------------------|---------------------------|----------|----------------------|
| CASTER SIZE | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH/HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 8-inch | 17½, 18½ inches | 13½ / 3½-inches | N/A | 1058836 |
| 6-inch | 16½, 17½-inches | 13½ / 3½-inches | N/A | 1058366 |
| | 15½-inches | 11-5/8 / 2-3/4-inches | N/A | 1058752 |

| 9000 XT WITH 3° SEAT-TO-FLOOR ANGLE AND 9000 SL (ADULT/HEMI FRAMES) | | | | |
|---|----------------------|---------------------------|----------|----------------------|
| CASTER SIZE | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH/HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 8-inch | 17½, 18½, 19½-inches | 13½ / 3½-inches | 1360 | 1058836 |
| 6-inch | 15½, 16½, 17½-inches | 11-5/8 / 2¾-inches | 1360A | 1058752 |

| 9000 XT WITH 6° SEAT-TO-FLOOR ANGLE (ADULT/HEMI FRAME) | | | | |
|--|----------------------|---------------------------|----------|----------------------|
| CASTER SIZE | SEAT-TO-FLOOR HEIGHT | ANTI-TIPPER LENGTH/HEIGHT | ON CHAIR | OFF CHAIR KIT NUMBER |
| 8-inch | 17½, 18½, 19½-inches | 13½ / 2-7/8-inches | N/A | 1113766 |
| 6-inch | 16½, 17½-inches | 12½ / 2¾-inches | N/A | 1113765 |
| | 15½-inches | 9½ / 2-3/8-inches | N/A | 1113764 |

Using/Adjusting Disk Wheel Locks

Using Patient Operated Disk Wheel Locks

⚠ WARNING

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

NOTE: For this procedure, refer to FIGURE 8.3.

NOTE: Position wheelchair on a flat, level surface to perform this procedure.

1. Ensure the wheelchair is not moving before engaging the wheel locks.

2. Depending on the model of wheel lock installed on the wheelchair, perform one (1) of the following:
 - Push-to-Lock - To engage, push the wheel lock handle forward.
 - Pull-to-Lock - To engage, pull the wheel lock handle backward.
3. Disengage the wheel locks by reversing STEP 2.

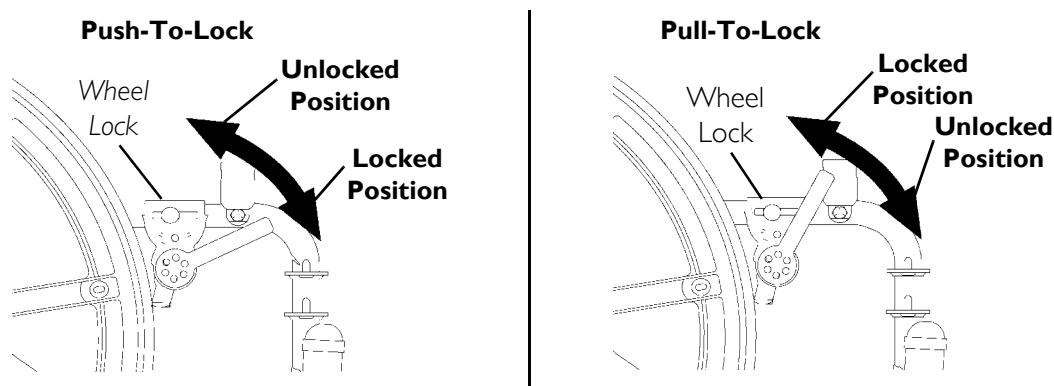


FIGURE 8.3 Using Patient Operated Disk Wheel Locks

Adjusting Patient-Operated Wheel Locks

NOTE: For this procedure, refer to FIGURE 8.4.

NOTE: The push-or-pull-to-lock wheel locks are also an option on the 9000XT Recliner.

NOTE: If wheels are pneumatic, before adjusting or replacing the wheel lock assemblies, ensure that the tires are inflated to the recommended psi on the side wall of tire. The recommended tire pressure is located on the side wall of the tire.

1. Disengage the wheel locks.
2. Perform one (1) of the following:
 - Bolt-on Wheel locks - Loosen the bolt and locknut that secure the wheel lock to the wheelchair frame.
 - Clamp-on wheel locks - Loosen the two (2) socket screws that secure the wheel lock to the wheelchair frame.
3. Reposition the wheel lock so that when engaged, the wheel lock shoe embeds the tire 1/8-inch (3/16-inch for pneumatic tires) and holds the occupied wheelchair in place when pushed.
4. Securely tighten the bolt and locknut or socket screws securing the wheel lock to the wheelchair frame.
5. Engage the wheel lock.
6. Measure the distance the wheel lock is embedded into the tire as shown in FIGURE 8.4.

NOTE: Any wheel lock adjustment should embed the wheel lock shoe at least 1/8-inch (3/16-inch if pneumatic tire) into the tire when engaged.

7. Repeat STEPS 1-6 until the wheel lock shoe embeds the tire 1/8-inch (3/16-inch for pneumatic tires) and holds the occupied wheelchair in place when pushed.
8. If the measurement of 1/8-inch (3/16-inch for pneumatic tires) can not be achieved, Perform one (1) of the following:
 - Bolt-on wheel locks - Remove the bolt and locknut that secure the wheel lock to the wheelchair frame and mount the wheel lock in the remaining mounting position.
 - Clamp-on Wheel locks - Proceed to STEP 9.
9. If wheel lock is unable to properly engage the wheel it may be necessary to install wheel lock shoe extensions. Refer to Installing Wheel Lock Shoe Extensions on page 85.
10. Repeat STEPS 1-9 for the opposite wheel lock.
11. Engage both wheel locks and ensure the occupied wheelchair is held in place when pushed.

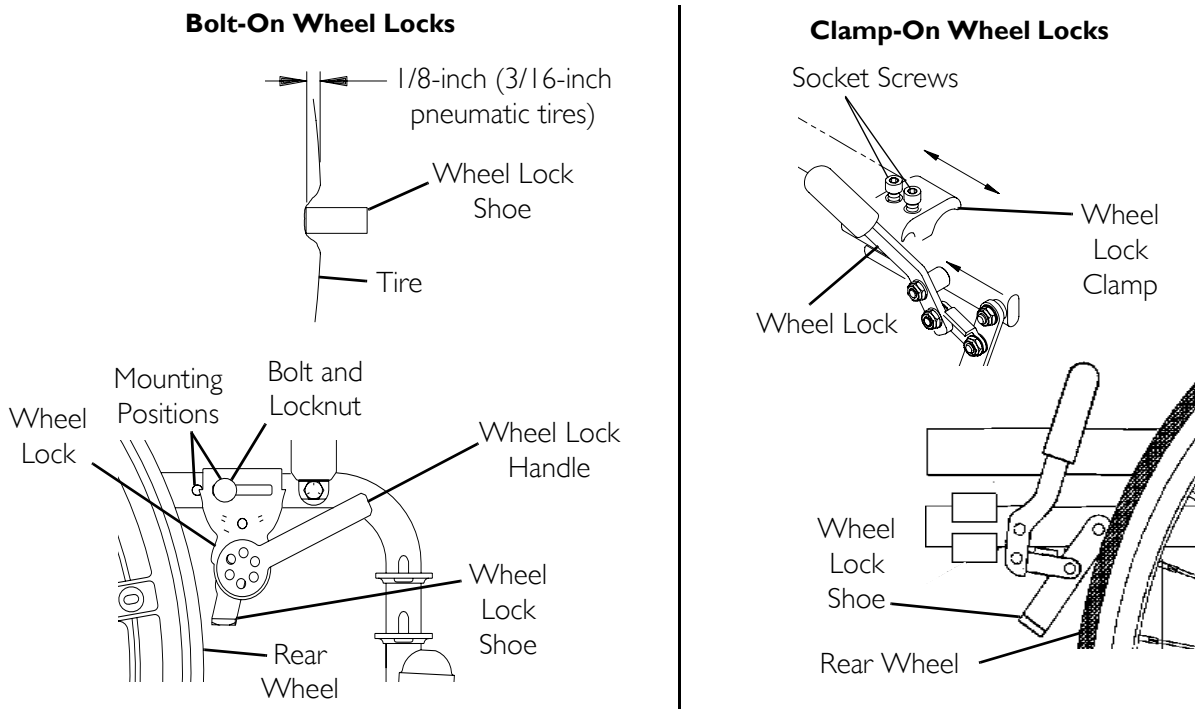


FIGURE 8.4 Adjusting Patient-Operated Wheel Locks

Installing Wheel Lock Shoe Extensions

NOTE: For this procedure, refer to FIGURE 8.5.

1. Loosen the two (2) set screws on the wheel lock shoe extension until the set screws do not protrude into the slot.
2. Insert the disk wheel lock shoe into the slot in the shoe extension.

NOTE: Ensure the pointed end of the wheel lock shoe extension is facing toward the rear wheel.

3. Position the wheel lock shoe extension so the outside edge is flush with the outside edge of the wheel lock shoe.
4. Securely tighten the two (2) set screws to secure the wheel lock shoe extension to the wheel lock shoes.

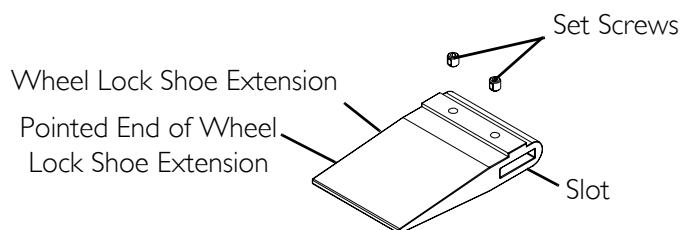


FIGURE 8.5 Installing Wheel Lock Shoe Extensions

NOTES

LIMITED WARRANTY

PLEASE NOTE: THE WARRANTY BELOW HAS BEEN DRAFTED TO COMPLY WITH FEDERAL LAW APPLICABLE TO PRODUCTS MANUFACTURED AFTER JULY 4, 1975.

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This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

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