



Invacare[®] Action Vertic

en **Manual wheelchair medium active**
Service Manual



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



Yes, you can.

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I Troubleshooting and Maintenance Guidelines

General Information

User manual and pre-sales information:

For pre-sales information and user manual related to this wheelchair, please consult the www.invacare.eu.com website.

NOTE: Battery, charger and electronic control devices have to be checked and repaired by Invacare’s Aftersales Service ONLY.

NOTE: Please recommend the user to follow the rules mentioned in the User Manual about Maintenance Schedule, Cleaning and Troubleshooting sections.

I.1 Trouble Shooting

CHAIR VEERS LEFT/RIGHT	SLUGGISH TURN/PERFORMANCE	CASTERS FLUTTER	SQUEAKS AND RATTLES	LOOSENESS IN CHAIR	CHAIR 3 WHEELS	SOLUTIONS
X	X	X			X	If pneumatic tyres, check for correct equal pressure.
	X	X	X	X		Check for loose stem nuts/screws.
X	X	X				Check castor angle adjustment.
X		X				Check that castor contact ground at the same time.

TABLE I.1 Troubleshooting

CAUTION

It is compulsory to use original Invacare spare parts which you can obtain from any Invacare subsidiaries. A list of spare parts is available at www.invacare.eu.com.

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 the bolt connections of any hardware attached to the frame. This could cause damage to the frame tubing.

1.2 Tightening Torques

The tightening torques stated in the following table are dependent on the thread diameters for the nuts and bolts for which no special values are determined. All values apply to dry and grease-free threads.

Thread	M4	M5	M6	M8	M10/12
Tightening torque in Nm mini/max	1,5/3 Nm	3/6 Nm	7/12 Nm	10/20 Nm	20/30 Nm

CAUTION

All other nuts not noted here must be tightened FINGERTIGHT!

1.3 Suggested Maintenance Procedures

1. Before using your wheelchair, make sure all nuts and bolts are tight. Check all parts for damage or wear and replace if necessary. Check all parts for proper adjustment.
2. Keep quick release axles free of dirt and lint to ensure positive locking and proper operation. Refer to section 5.2 Adjusting Quick-Release Axles.

WARNING

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

3. Clean quick release axles once a week with a Teflon lubricant.

WARNING

DO NOT use your wheelchair unless it has the proper tire pressure (BAR, KPa or P.S.I.).
DO NOT over inflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. The recommended tire pressure is on the sidewall of the tire.

4. Recommended tire pressure is listed on the sidewall of the tire (BAR, KPa or P.S.I.).

CAUTION

As with any vehicle, the wheels and tires must be checked periodically for cracks and wear, and must be replaced if damaged.

5. The wheels, castors and tires must be checked periodically for cracks and wear, and must be replaced when necessary.
6. Regularly check for loose spokes in the rear wheels. If loose, have them adjusted.

7. Periodically check handdrims to ensure they are secured to the rear wheels. Refer to section 5.3 Replacing Handdrims.
8. Periodically check caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon® lubricant if necessary.
9. Check upholstery for sagging, rips or tears.
10. Clean upholstery with mild soap and water.

1.4 Stability Warning

The seat height, seat depth, back angle, seating system/upholstery, size/position of the rear wheels, size/position of the front casters, seating options (e.g., back bag, ...) as well as the user condition directly relate to the stability of the wheelchair.

Any change to one or any combination of these factors changes the center of gravity and may cause the wheelchair to increase/decrease in stability.

<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>	SEAT HEIGHT	SEAT DEPTH	BACK ANGLE	SEATING SYSTEM/UPHOLSTERY	CASTOR SIZE	CASTOR POSITION	REAR WHEEL SIZE	REAR WHEEL POSITION	USER CONDITION	WHEEL BRAKES	ANTI-TIPPERS
SEAT 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/UPHOLSTERY	X	X	X	•	X	X	X	X	X	N/A	N/A
CASTOR SIZE	X	N/A	X	N/A	•	X	X	X	N/A	X	X
CASTOR POSITION	X	N/A	X	N/A	X	•	X	X	N/A	X	X
REAR WHEEL SIZE	X	N/A	X	N/A	X	X	•	X	N/A	X	X
REAR 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

TABLE 1.3 Stability of the wheelchair

Seat-to-floor heights have specific positions depending on rear wheel size, rear wheel position, front caster size/position and seat-to-floor angle.

2 Front Hangers

WARNING

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

A 50 mm clearance between the bottom of the footplate and the ground/floor **MUST** be maintained at all times.

2.1 Adjusting Footrest Height

NOTE: For this procedure, refer to FIGURE 2.1.

1. Remove calf strap, if necessary.
2. Remove the two locking screws (A & B) sideways with Allen key 4 mm.
3. Position the one-piece footplate assembly to the desired height.
4. If the distance between the bottom of footplate and the ground/floor is not 50 mm minimum, adjust footrest tube accordingly.
5. Insert the two locking screws (A & B) in one of the pre-set holes.
6. Securely tighten with Allen key 4 mm.
7. Reinstall the calf strap.



2.2 Adjusting Calf Strap Tension

NOTE: For this procedure, refer to FIGURE 2.2.

CAUTION

According to the position of the one-piece footplate (forwards or backwards), tension adjustment should perfectly keep the feet centered.

- I. Secure and adjust the calf strap (A) curvature around the front frame thanks to the hook and loop fasteners in order to stretch or slacken it.

WARNING

Always check that hook and loop fasteners are in place and make sure they perfectly overlap.

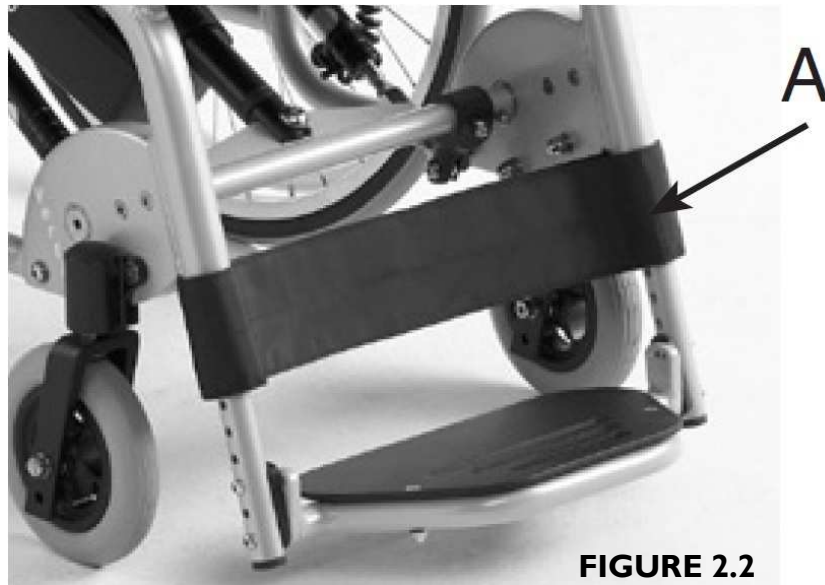


FIGURE 2.2

2.3 Adjusting One-piece Footplate (Angle & Depth)

NOTE: For this procedure, refer to FIGURE 2.3.

1. Remove the two locking screws (A & B) sideways with Allen key 4 mm.
2. Position the one-piece footplate assembly to the desired angle.
3. Position the one-piece footplate assembly forwards or backwards to the desired depth.
4. Insert the locking screw (B) in one of the three threaded holes.
5. Securely tighten with Allen key 4 mm.



3 Armrests

WARNING

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

3.1 Adjusting Armrests Height

NOTE: For this procedure, refer to FIGURE 3.1.

1. Loosen the two screws (A) with Allen key 5 mm of each armrest tube support to make their sliding on the backrest tubes easier.
2. Slide the armrest tube supports upwards or downwards based upon the user's morphology.
3. Firmly retighten the two fastening screws (A) sideways.
4. Repeat STEP 1 to 3 for the other backrest tube.

3.2 Armpad Foam Replacement

NOTE: The armpad foam tubular coating of the armrest tube is subject to wear.

1. Remove the armpad foam and perfectly clean the tube.
2. Coat the tube and the inside of the new armpad foam coating with very soapy water.
3. Slide the armpad foam coating forwards on the tube to its front end.

WARNING

Wait at least for 24 hours for the soapy water to be completely evaporated before using your stand-up wheelchair again.



FIGURE 3.1

4 Seat and Back

WARNING

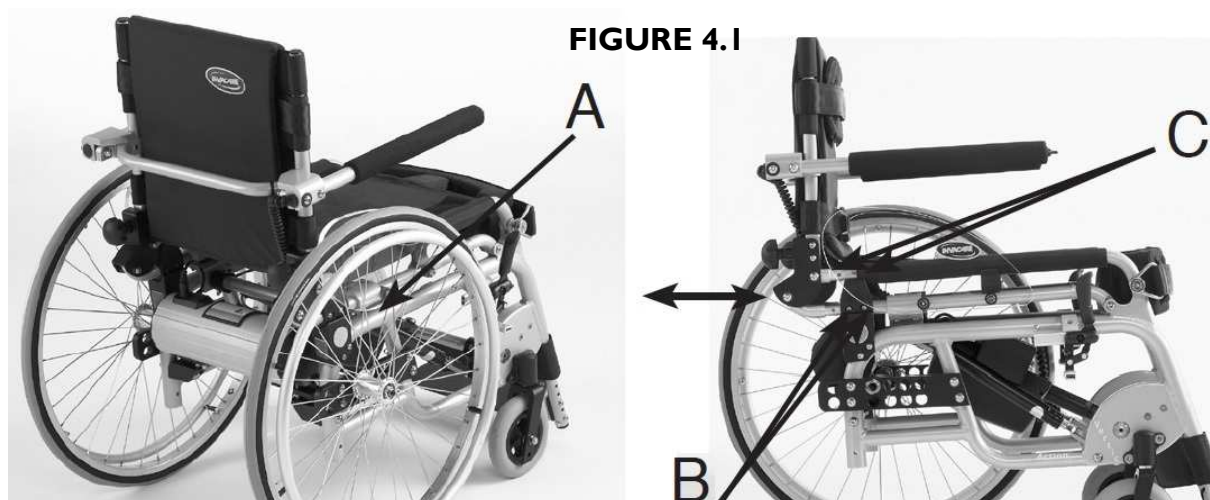
The seat height, seat depth, back angle, seating system, size/position of the rear wheels, size/position of the front casters, seating options (e.g. back bag, ...) as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of these factors changes the center of gravity and may cause the wheelchair to increase/decrease in stability. Refer to the TABLE I.3 in section I.4 Stability Warning.

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

4.1 Adjusting Seat Depth

NOTE: For this procedure, refer to FIGURE 4.1.

1. Loosen the 4 screws (A) with Allen key 6 mm located on the actuator back supports in order to facilitate the backrest supports sliding.
2. Loosen the two external (B) and internal (C) screws sideways with Allen key 4 mm.
3. Simultaneously slide the two support tubes forwards or backwards (based upon user's morphology) to the preset holes.
4. Re-tighten the 4 screws (B & C) sideways.
5. Make sure the 4 screws on the actuator back supports (A) are re-tightened, as there is a risk of vertical positioning system dysfunction if the supports slide on the chassis tubes.
6. Repeat STEP 1 to 5 for the other side.



4.2 Adjusting Seat Upholstery Tension

NOTE: For this procedure, refer to FIGURE 4.2

1. Disassemble one armrest panel by loosening the 2 screws (A) and the supports with Allen key 4 mm and spanner 10 mm.
2. Position the upholstery, if needed, according to the depth adjustment (based upon user's morphology), refer to paragraph 4.1. Adjusting Seat Depth.
3. Adjust hook and loop fasteners (B) in order to stretch or slacken them in width.
4. Reposition the armrest panel (A) and securely tighten fastening screws (A).
5. Repeat STEP 1 to 4 for the other side.

WARNING

Always check the quality and positioning of hook and loop fasteners.

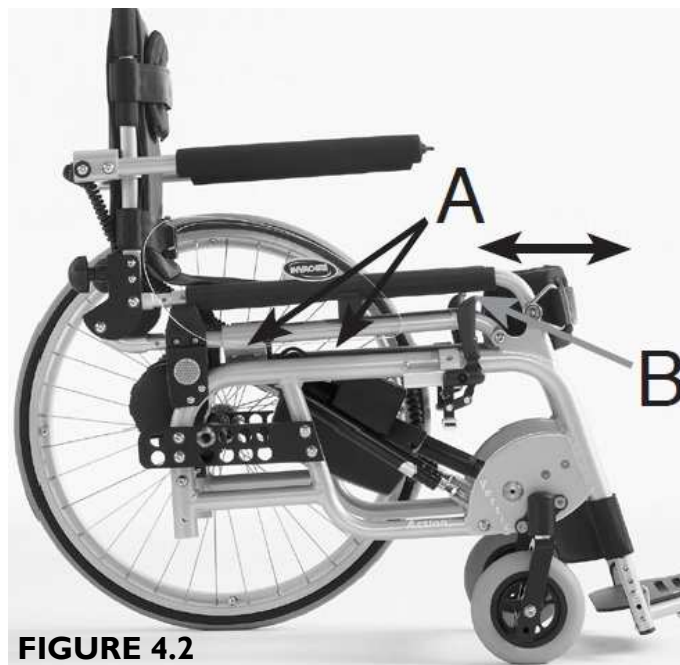


FIGURE 4.2

4.3 Adjusting Backrest Upholstery

NOTE: For this procedure, refer to FIGURE 4.3.

4.3.1 Adjusting Backrest Height

NOTE: For backrest height adjustment, first remove the backrest upholstery (A).

1. Slightly loosen the screw (B) with Allen key 3 mm.
2. Adjust to the desired height based upon the preset holes.
3. Tighten without forcing.
4. Reposition the backrest upholstery according to the new height adjustment.

4.3.2 Adjusting Backrest Upholstery Tension

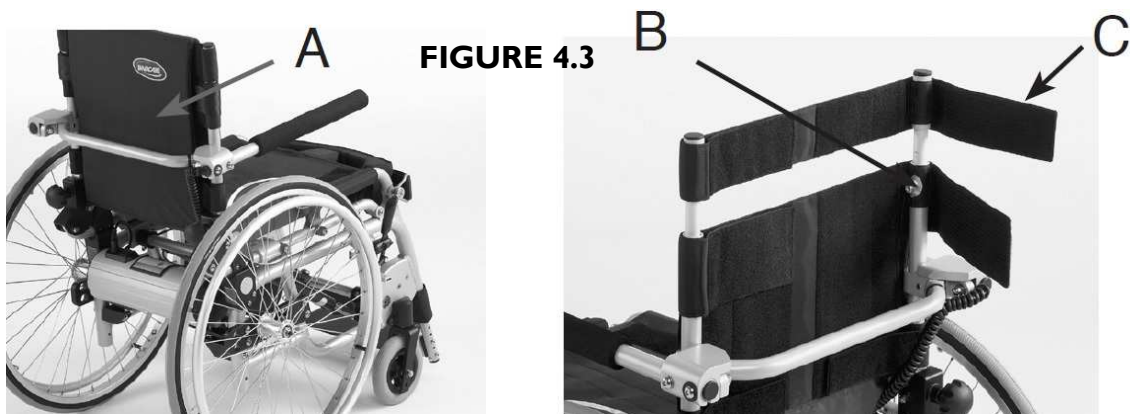
NOTE: For backrest tension adjustment, first remove the backrest upholstery (A).

1. Adjust the hook and loop strips (C) in order to stretch or slacken them.
2. Reposition the backrest upholstery (A) according to the new tension adjustment.

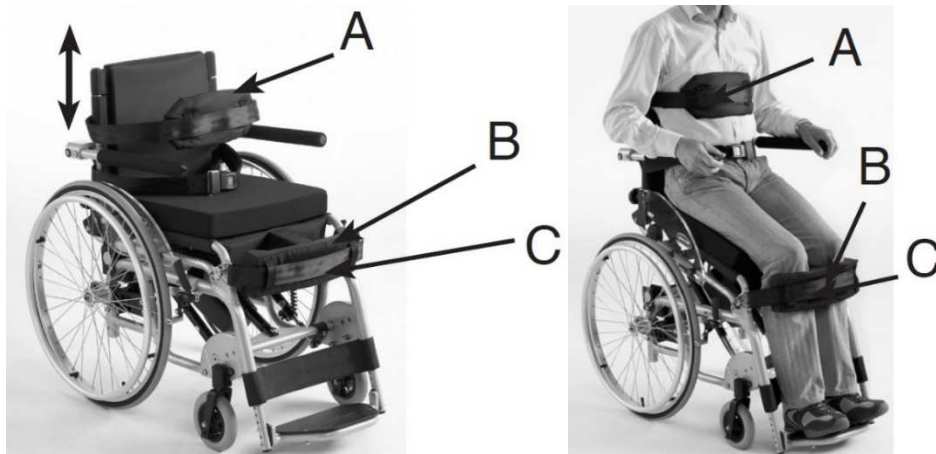


WARNING

Always check the quality and positioning of hook and loop strips.



4.4 Adjusting Straps and Supports



4.4.1 Adjusting Chest Strap

NOTE: Ideally, the chest strap is positioned at the base of the chest with the cushion (A) well centered.

1. For height adjustment, fasten the hook and loop fasteners to the rear part of the seat (under the flap)
2. For tension adjustment, make sure the ribcage is not compressed based upon user's morphology.

 **WARNING**

Always check that hook and loop fasteners are in place and make sure they perfectly overlap.

4.4.2 Adjusting Knee Support

NOTE: Ideally it is positioned at the base of kneecaps with the cushion (B) well centered on legs.

NOTE: Tension adjustment helps to hold legs during vertical positioning.

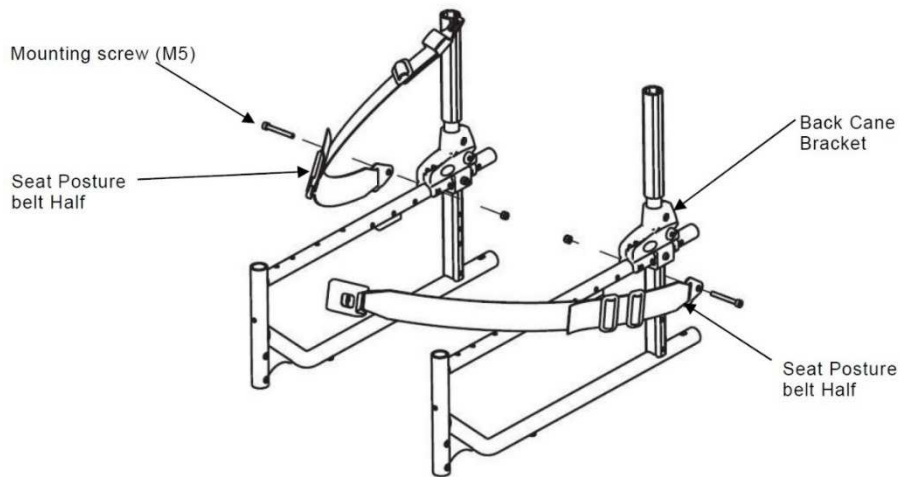
1. Tension adjustment helps to hold legs during vertical positioning.
2. If knee slipping is felt when standing up, go back to sitting position and re-tighten the strap (C) progressively.

 **WARNING**

Check that the two buckles are securely fastened to their supports.
Always check that hook and loop fasteners are in place and make sure they perfectly overlap.

4.4.3 Installing/Removing Seat Posture Belt

1. Remove seat cushion from wheelchair, if necessary.
2. Remove the mounting screw and locknut that secures the seat posture belt half to the wheelchair frame.
3. Repeat STEP 2 for opposite side, if necessary.
4. Do one of the following:
 - To install the seat posture belt, proceed to STEP 6.
 - Remove the existing seat posture belt from the wheelchair.
5. Engage the two halves of the new seat posture belt.
6. Align the mounting holes on the wheelchair frame and one end of the new seat posture belt.
7. Secure the new seat posture belt to the wheelchair frame with one mounting screw and washer. Tighten securely.
8. Repeat STEPS 6 and 7 for the opposite side of the seat posture belt.
9. Reinstall seat cushion onto wheelchair, if necessary.



5 Rear Wheels and Front Casters

5.1 Removing/Installing Rear Wheels

WARNING

The seat height, seat depth, back angle, seating system, size/position of the rear wheels, size/position of the front casters, seating options (e.g. back bag, ...) as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of these factors changes the center of gravity and may cause the wheelchair to increase/decrease in stability. Refer to the TABLE 1.3 in section 1.4 Stability Warning.

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

NOTE: For this procedure, refer to FIGURE 5.1.

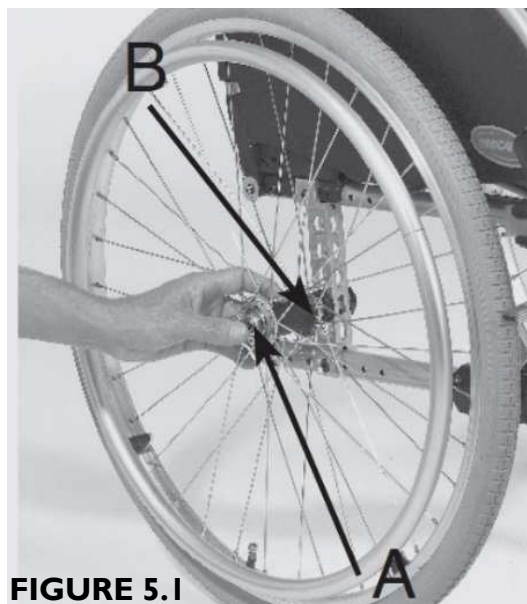


FIGURE 5.1

5.1.1 Removing Rear Wheels

1. Hold the centre of the rear wheel and push in the tip (A) of the quick release axle.
2. Pull the quick release axle and rear wheel out of the axle bracket (B) on the wheelchair frame.
3. Push in the tip (A) of the quick release axle again and pull the quick release axle out of the existing rear wheel.
4. Install new/existing rear wheel onto wheelchair. Refer to the Installing procedure in this section.

WARNING

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

The locking pins **MUST** be protruding past the inside of rear wheel hub for a positive lock.

Keep locking pins clean.

Invacare recommends inserting quick-release axles with the head end to the inside of the wheelchair to prevent accidental release during contact leisure activities.

5.1.2 Installing Rear Wheels

1. Install the existing quick release axle through the new/existing rear wheel.
2. Install the new/existing rear wheel and quick release axle into the axle bracket (B) on the wheelchair frame.
Refer to section 5.2 Adjusting Quick-Release Axles if the locking pins are not protruding past the inside of the axle bushing or there is too much movement of the rear wheel assembly in a back and forth position.

5.2 Adjusting Quick-Release Axles

NOTE: For this procedure, refer to FIGURE 5.2.

1. Remove rear wheel and quick release axle from the wheelchair. Refer to section 5.1 Removing/Installing Rear Wheels
2. Depress detent pin in the quick release axle and slide the quick release axle through the rear wheel hub.
3. Release detent pin to ensure that the locking pins are fully released.
4. Increase or decrease end play by adjusting the locknut on the end of the quick release axle.

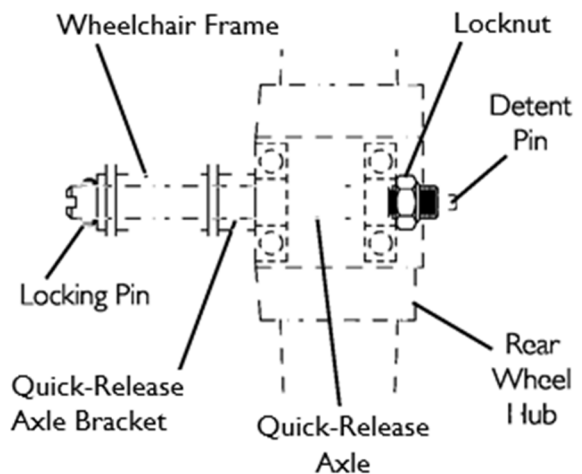


FIGURE 5.2 Adjusting Quick-Release Axles

WARNING

Make sure the detent pin of the quick release axle is fully released **BEFORE** operating the wheelchair.

Keep locking pins clean.

5. Reinstall rear wheel onto the wheelchair. Refer to section 5.1 Removing/Installing Rear Wheels.
6. Repeat STEPS 4 to 5 until the quick release axle detent pins are fully released past the wheelchair frame.

5.3 Replacing Handrims

NOTE: for this procedure, refer to FIGURE 5.3.

1. Remove the rear wheel from the wheelchair. Refer to section 5.1 Removing/Installing Rear Wheels
2. Remove the mounting screws that secure the existing handrim to the rear wheel.
3. Remove the existing handrim.
4. Install the new handrim and secure to the rear wheel with the existing mounting screws.
5. Reinstall the rear wheel to the wheelchair. Refer to Removing/Installing Rear Wheels paragraph.
6. Repeat STEPS 1 to 5 for opposite wheel, if necessary.

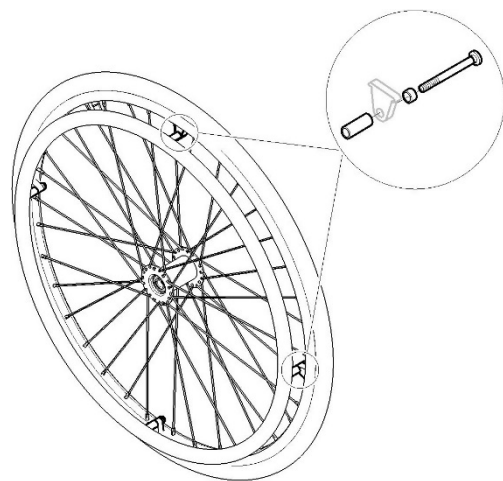


FIGURE 5.3

5.4 Adjusting Wheelbase Length

NOTE: For this procedure, refer to FIGURE 5.4 to section 5.1 Removing/Installing Rear Wheels.

1. Remove the wheel. Refer to 5.1 Removing/Installing Rear Wheels paragraph.
2. Remove the locknut and washer that secures the axle bracket to the axle plate.
3. Align the axle bracket with one of the adjustment holes on the axle plate. There are 5 positions possible: Factory setting is position “B” Standard, position “A” is more Passive (better stability), positions “C”; “D” and “E” are more Active (better manoeuvrability).

For this procedure, refer to FIGURE 5.4.

WARNING

Any change to one or any combination of these factors changes the center of gravity and may cause the wheelchair to increase/decrease in stability.

Anti-tippers can be fitted to secure the stability if required. Refer to section 8 .

4. Secure the axle bracket to the axle plate, at the desired length, with the locknut and washer.
5. Repeat STEPS 1 to 4 for the other axle bracket.

NOTE: Both axle brackets should be set at the same position.

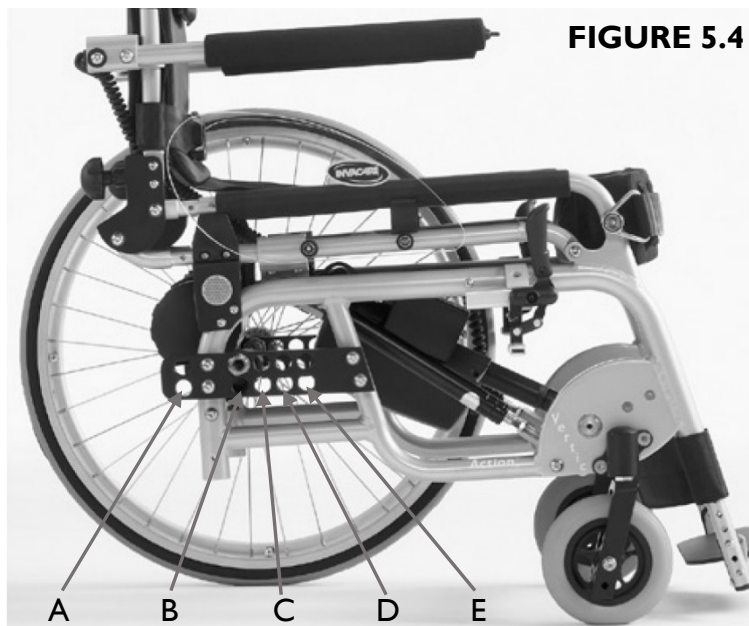


FIGURE 5.4

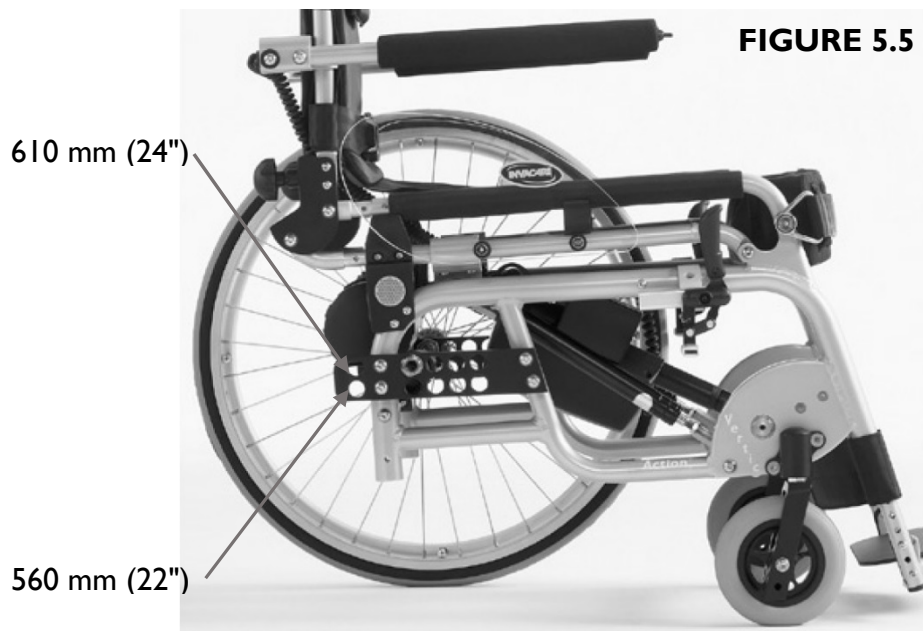
Rear Wheel Axle Bracket Position					
Seat Depth	A	B	C	D	E
360 mm				Standard	Active
385 mm			Standard		Active
410 mm		Standard		Active	
435 mm		Standard	Active		
460 mm	Passive	Active			
485 mm	Passive	Active			
510 mm	Standard				

5.5 Change Rear Wheel Size

NOTE: For this procedure, refer to FIGURE 5.5 and to sections 5.4 Adjusting Wheelbase Length; 5.1 Removing/Installing Rear Wheels and 6.1 Adjusting Wheel Brakes.

1. Remove the rear wheel from the wheelchair. Refer to section 5.1 Removing/Installing Rear Wheels.
2. Remove the locknut and washer that secures the axle bracket to the axle plate.
3. Align the axle bracket with one of the five adjustment holes on the axle plate. Refer to section 5.4 Adjusting Wheelbase Length.
4. Secure the axle bracket to the axle plate, at the desired position, with the locknut and washer.
5. Install the rear wheel. Refer to section 5.1 Removing/Installing Rear Wheels.
6. Repeat STEPS 1 to 5 for the other rear wheel.

NOTE: Both rear wheels should be set at the same position.



5.6 Replacing/Repairing Rear Wheel & Front Caster Tire/Tube

CAUTION

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

5.7 Adjusting Forks

WARNING

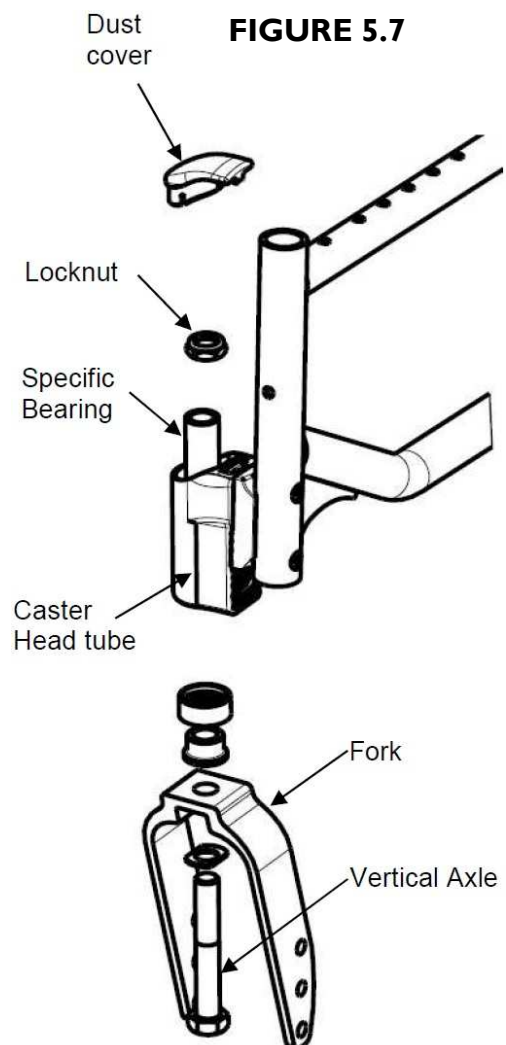
Risk of wobbling casters

Caster angle vertical axis **MUST** be at $90^{\circ} \pm 1^{\circ}$ from the ground. Both caster assemblies should be at the same angle.

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

NOTE: For this procedure, refer to FIGURE 5.7.

1. Remove the dust cover from the caster head tube.
2. To properly tighten caster journal system and guard against flutter, perform the following check:
 - a. Tip back the wheelchair to floor.
 - b. Pivot caster fork assemblies in rear position.
 - c. Push caster to initiate clockwise movement.
 - d. Let caster fork assembly rotate freely, if not change the upper specific bearing.
3. Adjust locknuts to appropriate torque (15/20 Nm) with a 19 mm socket wrench; do not over tight the locknut, you may risk to damage the bearings.
4. Test wheelchair for manoeuvrability.
5. Snap dust cover into the caster head tube.
6. Perform STEPS 1 to 5 on the other side.



5.8 Removing/Installing Caster Assemblies

NOTE: If replacing a front caster note the mounting position of the existing front caster for installation of the new front caster.

NOTE: Both front casters MUST be the same size and adjusted to the same height.

NOTE: For this procedure, refer to FIGURE 5.8.

5.8.1 Removing Front Wheels

1. Remove the mounting bolt, axle spacers (if present) and locknut that secure the front wheel to the fork.
2. Remove the wheel from the fork.

5.8.2 Installing Front Wheels

1. Using the mounting bolt, axle spacers (if present) and locknut, secure the wheel to the desired wheel mounting position.
2. Ensure fork stem is perpendicular to the flat surface.

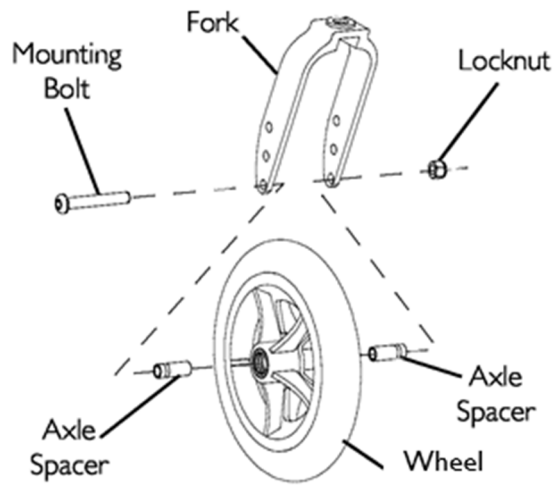


FIGURE 5.8 Removing/Installing/
Repositioning the front wheel

6 Wheel Brakes

6.1 Adjusting Wheel Brakes

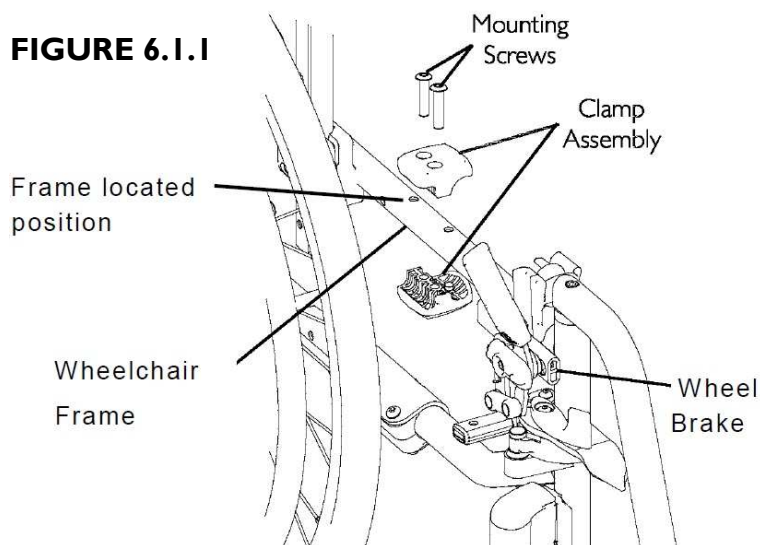
NOTE: When changing the position or size of the rear wheels, the wheel brakes MUST be repositioned.

NOTE: Before adjusting or replacing the wheel brake assemblies, ensure that the tires are inflated to the recommended BAR, KPa, P.S.I on the side wall of the tire.

6.1.1 Adjusting Wheel Brake Position

NOTE: For this procedure, refer to FIGURE 6.1.1

1. Remove the mounting screw and locknut that secures the wheel brake assembly to the wheelchair frame.
2. Remove the wheel brake assembly from the clamp assembly.
3. Move the clamp assembly (if necessary) to the other wheel brake position on the wheelchair frame.
4. Install the wheel brake assembly into the clamp assembly.
5. Secure the wheel brake assembly to the wheelchair frame with the two mounting screws.
6. If necessary, repeat STEPS 1 to 5 for the other wheel brake assembly.

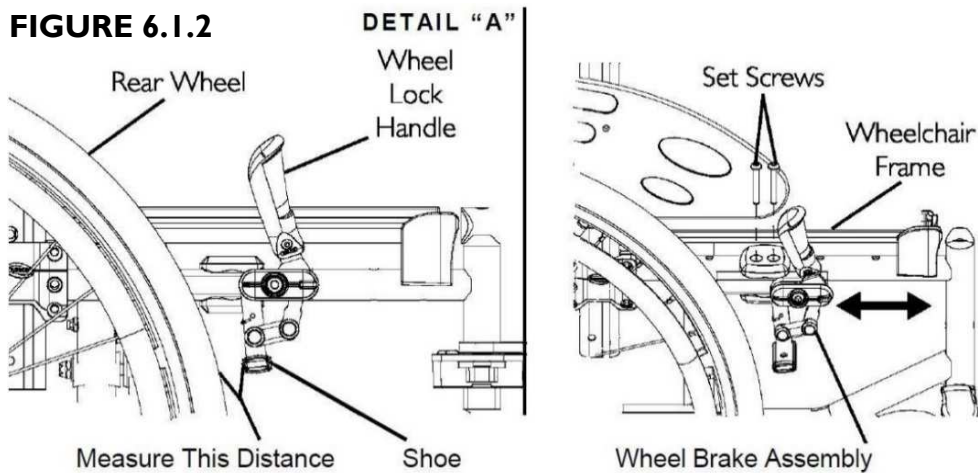


6.1.2 Adjusting Wheel Brake Tension

NOTE: For this procedure, refer to FIGURE 6.1.2

1. Loosen, but **DO NOT** remove the two set screws (Detail –A-) that secure the wheel brake assembly to the wheelchair frame.
2. Measure the distance between the wheel brake shoe and the rear wheel.
3. Slide the wheel lock along the wheelchair frame until the measurement is 4 mm for solid tire and for pneumatic.
4. Securely tighten the two set screws (Detail –A-).

5. Repeat STEPS 1 to 4 for the opposite wheel brake
6. Engage the wheel brakes and push against the wheelchair to determine if the wheel brakes engage the rear wheels enough to hold the occupied wheelchair.
7. Repeat STEPS 1 to 6 until the wheel brakes engage the rear wheels enough to hold the occupied wheelchair.



6.2 Replacing Wheel Brake Handle

NOTE: For this procedure, refer to FIGURE 6.2

8. Remove the mounting screw and locknut that secures the wheel brake handle to the wheel brake assembly.
9. Remove the wheel brake handle and discard.
10. Align the new wheel brake handle with the wheel brake assembly.
11. Secure the new wheel brake handle with the mounting screw and locknut.
12. If necessary, repeat STEPS 1 to 4 for the other wheel brake.

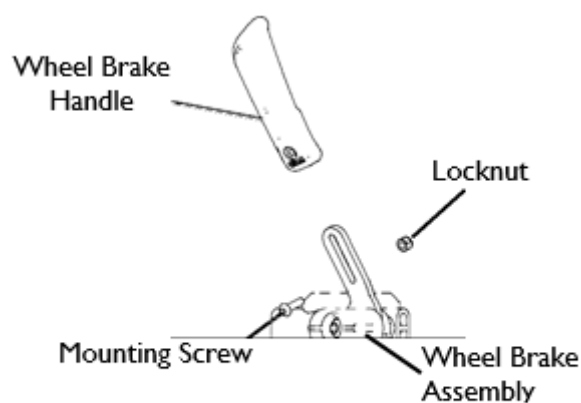


FIGURE 6.2

7 Options

⚠ WARNING

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

7.1 Installing/Adjusting Push Handles

NOTE: For this procedure, refer to FIGURE 7.1.

1. Remove the cap which shuts the backrest tube.
2. Insert the push handle into the backrest tube.
3. Position the screw in the preset hole (A).
4. Firmly retighten screw and nut sideways with Allen key 4 mm and spanner 10 mm.
5. Perform STEPS 1 to 4 on the other side.

NOTE: Both Push Handles should be set at the same height.



8 Anti-Tippers

WARNING

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

Anti-tippers MUST be attached at all times. Inasmuch as the anti-tippers are an option on this wheelchair (you may order it with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as an additional safeguard for the wheelchair user.

Ensure both anti-tippers are strongly fixed to the mounting hole on both side.

8.1 Installing Anti-Tippers

NOTE: For this procedure, refer to FIGURE 8.1.

1. Insert the anti-tipper wheel into the frame vertical tube.
2. Position the screw in the preset hole (B).
3. Firmly retighten screw and nut sideways with Allen key 4 mm and spanner 10 mm.
4. Perform STEPS 1 to 3 on the other side.

NOTE: Make sure that the anti-tipper wheel is ALWAYS located outside the rear wheel volume.



9 Periodic Maintenance Guidelines

NOTE: Always clean the wheelchair before any inspection/adjustment. Regular cleaning will reveal loose or worn parts and enhance the smooth operation of the wheelchair.

Initial Inspection:

Initial adjustments should be made to suit the personal body structure needs and preferences of the user. Thereafter follow these maintenance procedures:

9.1 Inspect/Adjust Initially

- Wheelchair rolls straight (no excessive drag or pull to one side).
- Ensure all hardware is tight (see page 5).
- All fasteners on clothing guards are secure.
- Adjustable height arms operate and lock securely.
- Armrest armpad sits flush against arm tube.
- Seat and/or back upholstery have no rips.
- Inspect adjustable angle back attaching hardware is securely tightened.
- Ensure hand grips are secure to backrest canes.
- Sealed bearings and axle nut tension are correct.
- No excessive side movement or binding when rear wheels are lifted and spun.
- Quick-release axles lock properly (see page 16).
- Inspect handrims for signs of rough edges or peeling finish.
- Inspect for broken spokes.
- Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- Wheel bearings are clean and free of moisture.
- Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop
- Ensure all caster/wheel/fork fasteners are secure (see pages 5 & 15).
- Wheel brakes do not interfere with tyres when rolling.
- Wheel brakes pivot point are free of wear and looseness.
- Wheel brakes are easy to engage.
- Inspect tires/castors for flat spots and wear.
- Check pneumatic tires for proper inflation
(recommended tire pressure is listed on the side wall of the tire).
- Ensure axles are free from dirt, lint, etc.
- Ensure roller bearings are free from dirt, lint, etc.
- Adjust wheel brakes as tires wear.
- Clean and wax all parts.
- Clean upholstery and armrests.
- Ensure castors are free of debris.

9.2 Inspect/Adjust Weekly

- Wheelchair rolls straight (no excessive drag or pull to one side).
- Quick-release axles lock properly (see page 16).
- Inspect for broken spokes.
- Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- Inspect tires/castors for flat spots and wear.
- Check pneumatic tires for proper inflation (recommended tire pressure is listed on the side wall of the tire).
- Ensure castors are free of debris.
- Lubricate the different articulations of the stand-up mechanism.

9.3 Inspect/Adjust Monthly

- 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.
- Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop.
- Wheel bearings are clean and free of moisture.
- Wheel brakes do not interfere with tyres when rolling.
- Wheel brake pivot point are free of wear and looseness.
- Ensure all caster/wheel/fork/head tube fasteners are secure (see pages 5 & 20).
- Ensure all hardware is tight (see page 5).
- Ensure hand grips are secure to backrest canes.
- Ensure castors are free of debris.
- Lubricate the different articulations of the stand-up mechanism.

9.4 Inspect/Adjust Annually (1)

- Wheelchair rolls straight (no excessive drag or pull to one side).
- Adjustable height arms operate and lock securely.
- Armrest armpad sits flush against arm tube.
- All fasteners on clothing guards are secure.
- Seat and/or back upholstery have no rips.
- Inspect adjustable angle back attaching hardware is securely tightened.
- No excessive side movement or binding when rear wheels are lifted and spun.
- Inspect handrims for signs of rough edges or peeling finish.
- Inspect tires/castors for flat spots and wear.
- Check pneumatic tires for proper inflation (recommended tire pressure is listed on the side wall of the tire).
- Wheel brake pivot point are free of wear and looseness.
- Clean upholstery and armrests.
- Sealed bearings and axle nut tension are correct.
- Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop.
- Wheel bearings are clean and free of moisture.

9.4 Inspect/Adjust Annually (2)

- Wheel brakes are easy to engage.
- Ensure axles are free from dirt, lint, etc.
- Ensure roller bearings are free from dirt, lint, etc.
- Adjust wheel brakes as tires wear.
- Clean and wax all parts.
- Ensure castors are free of debris.
- Lubricate the different articulations of the stand-up mechanism.

9.5 Lubrication Points Weekly/Monthly/Annually

The raising / lowering mechanism does not need any particular maintenance, just regularly lubricate the different articulations (A) of the stand-up mechanism with fluid oil (same type as for a sewing machine) or 3 in 1 type oil spray equipped with precision tip.



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