



ROWHEELS

INSTALLATION AND TROUBLESHOOTING

INSTALLATION GUIDE—
INSTALLATION VIDEOS—
TROUBLESHOOTING—

WHAT TO EXPECT:

When your Rowheels arrive, they should be packaged as described below:

Upon opening your package, there will be a top insert with two pockets labeled "Additional Parts Inside"

These include:

- An owner's manual, spacers, welcome letter and welcome letter
- Frame clamps wrapped separately in padded envelopes



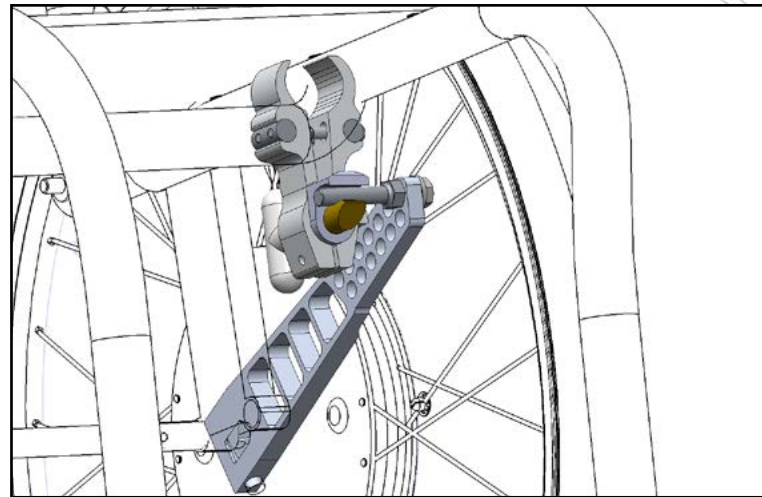
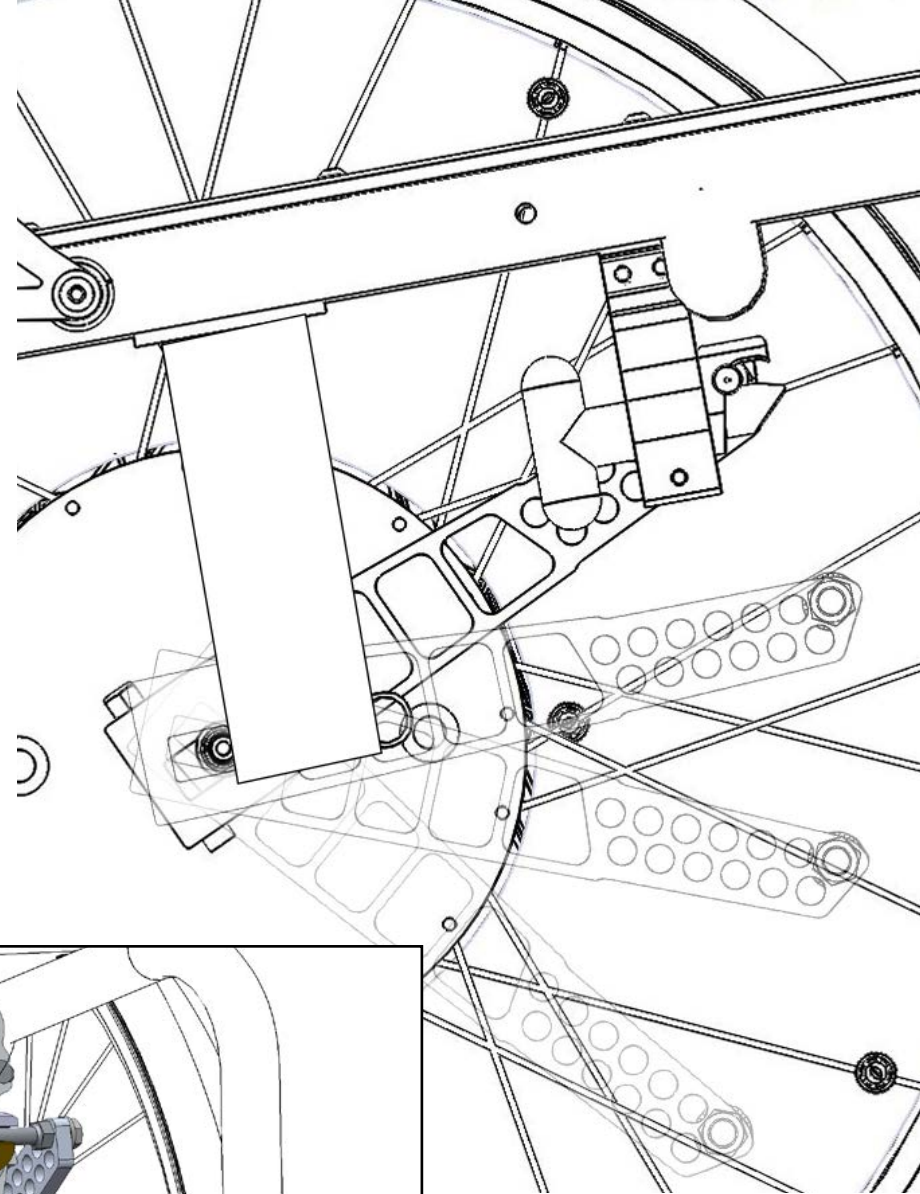
••• Your new Rowheels packed tightly with foam blocks

ASSEMBLY:

For REV™ Wheels to function properly, the Included latch clamp mechanism must be installed on the chair so it can engage/capture the torque arm pin.

The goal of this system is to eliminate the need for the user to worry about lining up the torque arm pin when putting REV wheels on their chair and make it just as easy to remove them (by simply pushing the quick release button).

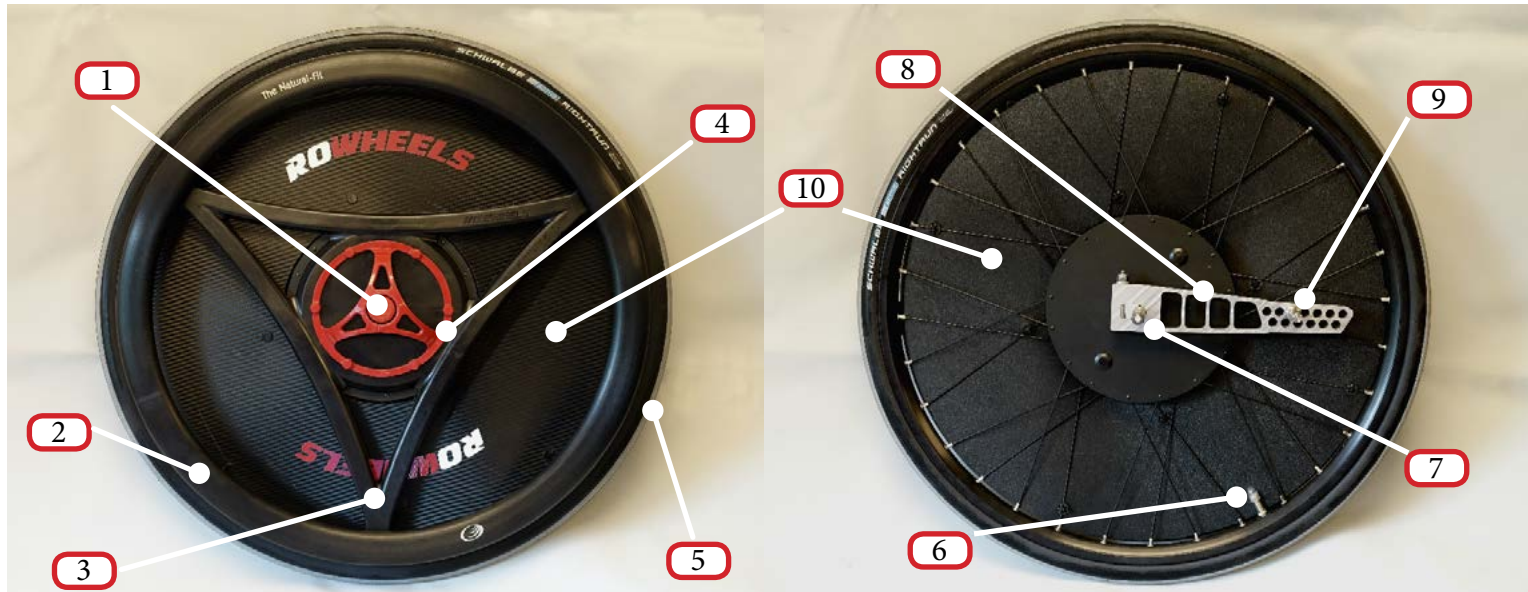
[OWNER'S MANUAL](#)



REV WHEEL COMPONENTS:

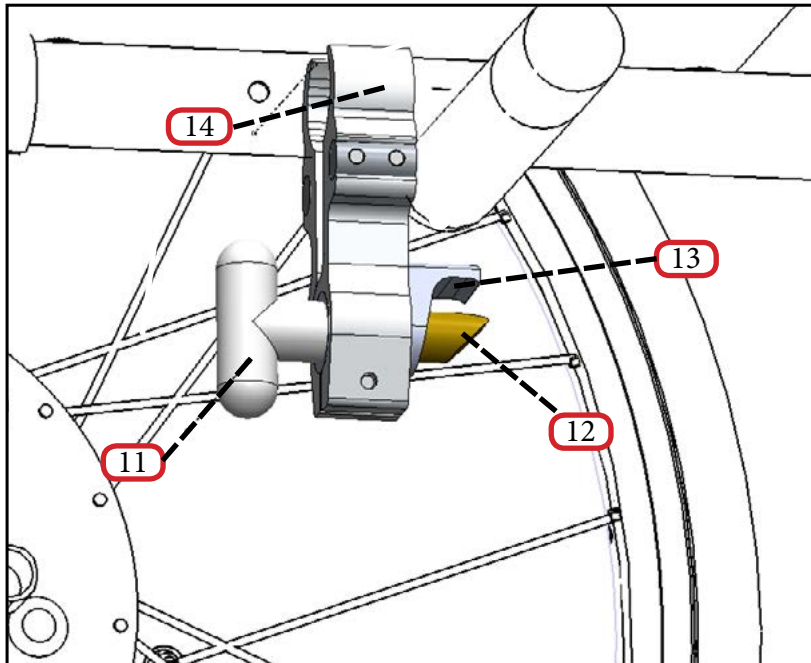
ITEM NUMBER	DESCRIPTION
1	Quick Release Button
2	Handrim
3	Handrim Hub
4	Handle
5	Tire

ITEM NUMBER	DESCRIPTION
6	Valve Stem
7	Axle
8	Torque Arm
9	Torque Arm Pin
10	Spoke Guard

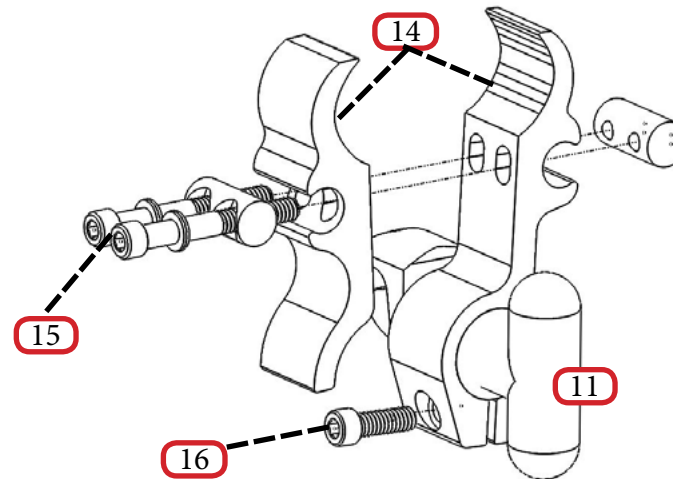


FRAME LATCH ASSEMBLY:

The frame clamp latch must be installed on the wheelchair's frame. It fits chairs with tubular frames diameter between 0.75" and 1.375" and some oval frames like the Quickie Q7. It can be mounted with the T-handle facing the front or back (recommended) of the frame.



ITEM NUMBER	DESCRIPTION
11	T-Handle Release
12	Pin Latch Mechanism
13	Pin Receiver Slot
14	Universal Frame Clamp
15	Frame Clamp Screws
16	Set Screw



FRAME LATCH INSTALLATION:

Please refer to the pages 5 and 6 to locate the various parts of the wheel.

ATTACHING THE FRAME LATCH MECHANISM

For the REV™ to function properly the torque arm (8) must be held securely in place. The torque arm pin (9) is held by the frame latch mechanism (11). The frame latch mechanism is permanently mounted to the frame through its universal frame clamp (13).

1. Begin installation by removing your standard rear wheels and locating the seating frame tubes of the chair. This part of the frame is below the seat cushion of the chair and runs along the underside of the seat cushion. This is the optimal mounting location.

2. Engage the quick release button on your wheel (Figure #1)

3. Loosely install the universal frame clamp (14) and the frame latch mechanism (12) with the two frame clamp bolts (15) so that the clamp will not fall off, but can move freely along the frame tube. There may be a need to adjust the placement of the seat straps or other accessories to make room for the clamp (Figure #3). Rotate the frame latch mechanism by loosening the set screw (16) so that the pin sits properly as seen in Figure #4.

4. Measure the approximate distance from the center of the axle receiver to the slot where the pin seats in the latch (Figure #2). Please note that it may be necessary to find more suitable places to mount the pin latch mechanism. This is most common on folding chairs where there is less space available. Please refer to our [installation videos](#) on page 11 for detailed instructions.



FIGURE #1

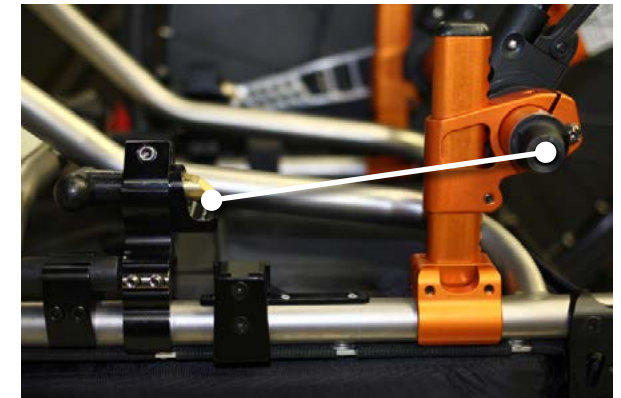


FIGURE #2



FIGURE #3

**Move seat straps to position universal frame clamp*

FRAME CLAMP INSTALLATION:

5. (Refer to table on page 5 for part location). Slide the wheel axle (7) partially into the axle receiver of the chair. With the axle in place, locate the torque arm pin in the pin receiver slot (13) of the pin latch mechanism. Finish pushing the axle into the axle receiver until the quick release balls are fully engaged.

Verify that the t-handle release knob is easily accessible and does not interfere with any other parts of the chair. The universal frame clamp should be adjusted and mounted to the frame such that the pin sufficiently extends through the slot and is also able to swing freely for latching.

In order to have smooth engagement between the torque arm pin (9) and the frame latch mechanism, the angle between the flat face of the pin receiver slot and the torque arm pin should be as close to parallel as possible. To adjust the angle, loosen the set screw (16) and rotate the pin latch mechanism until the correct angle is achieved. Tighten the set screw after the parts have been adjusted.

The torque arm pin should sit snugly between the pin latch mechanism and the flat area on the pin receiver slot (Figure 4). If the frame clamp is not close enough to the torque arm pin, the pin may rattle. To reduce rattling, move the frame clamp along the frame of the chair closer to the axle receiver. By moving the frame clamp closer to the torque arm pin, it may become more difficult to remove the wheel. If it does become more difficult, use the release knob to disengage the latch before attempting to remove the wheel.

6. Confirm that the axle has been fully inserted into the axle receiver of your chair. Release the quick release button to lock the wheel into the axle receiver. Make sure that the axle is secure in the axle receiver, then begin to tighten the frame clamp bolts using a 3/16" hex wrench, alternating between screws. Give the wheel a pull to test that it is secure.

7. Repeat the same procedure with the other wheel.

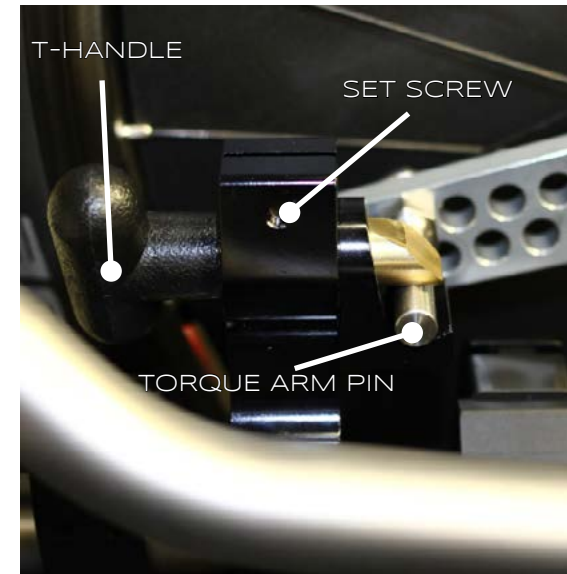


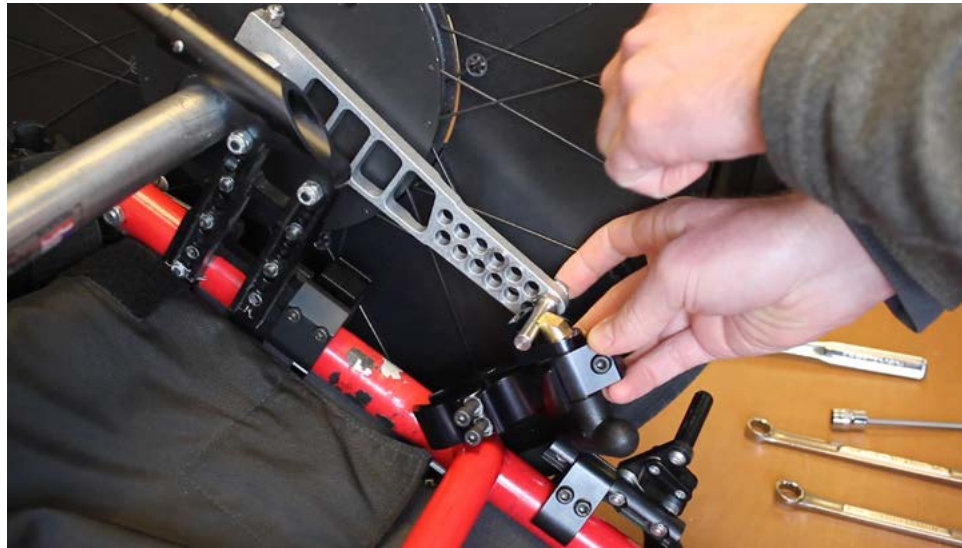
FIGURE #4



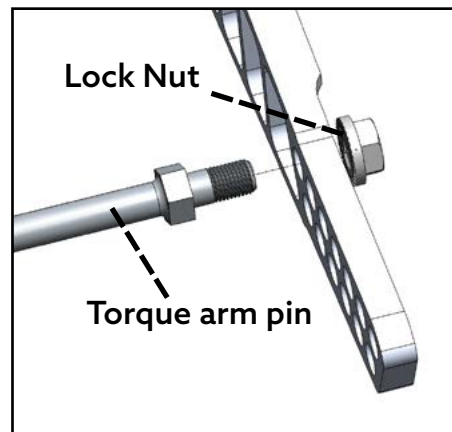
FIGURE #5

TORQUE ARM PIN ADJUSTMENT:

If the location of the torque arm pin places the frame clamp in a location along the chair frame that is inaccessible due to other components, the torque arm pin can be moved to different locations on the torque arm. The example below shows a situation where the chair frame dictates the location of the frame clamp.

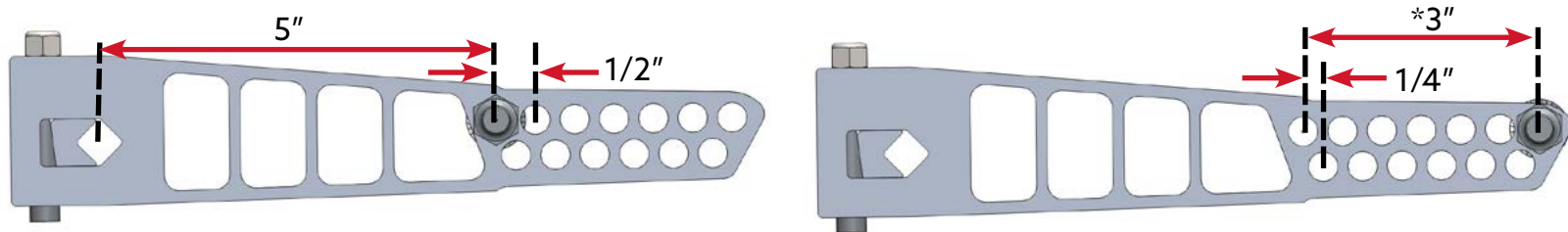


To move the torque arm pin to a different location on the torque arm you will need two 9/16 inch torque wrenches. One to hold the torque arm pin and the other to hold the lock nut.



TORQUE ARM PIN ADJUSTMENT:

We offer two different size torque arms, an 8 inch and a 10 inch torque arm. The 8 inch torque arm has adjustments placing the torque arm pin 5 to 8 inches from the axle in 1/4 inch increments. The 10 inch torque arm allows the torque arm pin to be placed 5 to 10 inches from the axle, in 1/4 inch increments.



8 inch Torque Arm Configuration

**This dimension is 5 inches on the 10 inch torque arm*



Once the torque arm pin is in the desired location on the torque arm, tighten the lock nut. The nut should be tightened to a snug fit. Make sure you that it is not tightened beyond one third of a turn.

INSTALLATION VIDEOS:

[FRAME CLAMP INSTALLATION](#)

[GENERAL INSTALLATION](#)

[INSTALLATION TOO LOOSE](#)

[INSTALLATION TOO TIGHT](#)

TROUBLESHOOTING:

REV wheels are a precision-engineered product. To ensure your chair and REV wheels function properly together, you will need to make minor adjustments from time to time. The chart below provides advice on solving some of the more common adjustment issues you may experience. If the solutions below do not solve your problem or if you experience a problem not addressed below, please contact your local Rowheels provider or contact us at [Rowheels customer support](#). Please note, if more than one solution in the chart below applies to your particular adjustment issue, always try one solution at a time until the problem is solved.

ISSUE	Rattling noise when propelling the chair/rolling	Wheels feel sluggish or don't seem to be rolling properly	You feel unstable or "tippy" when propelling your chair	Rubbing/friction like noise when rolling/propelling	Taking the wheels off using the quick release is difficult	Chair veers left or right
CAUSE	<i>Frame clamp installation is too loose</i>	<i>Tires are underinflated or wheels are not aligned, causing toe-in/out</i>	<i>Your chairs axle receiver//camber tube location is not set up properly for optimal pulling/rowheeling</i>	<i>REV wheel tires are coming in contact with some part of the chair due to chair's camber</i>	<i>Frame clamp installation is too tight</i>	<i>If you have pneumatic tires, they are not properly and equally inflated</i>
SOLUTION	See page 13	See page 14	See page 15	See page 16	See page 17	See page 18

TROUBLESHOOTING: RATTLING NOISE

Issue(s):

- There is a rattling noise coming from the latch each time the you pull on the handrim.
- There is too much “play” in the wheel. Play is the feeling you get when you pull on the handrim but it takes a moment for the wheel to move accordingly.

Cause(s):

- The Torque Arm Bolt connects to the Universal Frame Clamp using a latching system. If the Torque Arm Bolt is not secured in the latch you can experience some of the issues listed above. In this case, the fit between the Torque Arm Bolt and the Universal Frame Clamp is too loose.

Solution(s):

The solution to reduce play in the wheel and rattling between the latch and the Torque Arm Bolt is to use a 3/16 inch hex key to adjust the position of the clamp. The clamp needs to move slightly closer to the axle receiver along the frame of the wheelchair. The Torque Arm Bolt should be able to successfully swing into the latch without having to engage the latch release knob. The Torque Arm Bolt should sit securely between the latch and the latch housing. Once the Universal Frame Clamp is in the desired position, slowly tighten the two central screws, alternating between screws, until the clamp is secure. Give the wheel a pull to verify that it is secure, and that the rattling and/or play has been removed. Repeat the process until the desired fit is achieved.

Notes:

- If the need arises, you can move the Torque Arm Bolt to a different position on the Torque Arm for a better fit. Use two 9/16” standard wrenches, one around the hex nut on the bottom of the Torque Arm and one on the Torque Arm Bolt on the top side of the arm. Loosen and remove the nut, and move the Torque Arm Bolt to another position on the Torque Arm. Replace the nut and tighten as securely as possible. Wiggle the bolt to ensure that it is securely fastened.
- For more information, refer to the Rowheels REV Series Owner’s Manual and watch this instructional video below.

[INSTALLATION TOO LOOSE VIDEO](#)

TROUBLESHOOTING: ROLLING SLUGGISH

Issue(s):

- After a strong pull, the wheels fail to roll a significant amount and pulling is more difficult and inefficient

Cause(s):

- The tires are underinflated.
- The alignment of the wheels is off, causing toe-in/out. This increases friction inside the hub of the wheel hub and reduces its performance.

Solution(s):

- **A:** Rowwheels recommends that the tire is inflated to at least 110 psi. If the tire pressure drops lower than that, you will begin to see a decrease in performance. Checking your tire pressure is part of the recommended daily maintenance for your pair of Rev Series wheels. If proper inflation does not resolve issue, attempt step B below:
- **B:** REV wheels may be out of alignment due to toe-in/out. Toe refers to how well the rear wheels of the chair are aligned relative to the ground. It affects how well the chair will roll. Drag or rolling resistance is optimally minimized when the wheel toe is set to 0.
- To make sure your wheels are properly aligned, use a tape measure or yardstick to measure the distance from the outside of one wheel to the outside of the other while facing the front of your chair. Make sure to measure from the floor to the center of the axle (Figure A) and be sure the tape measure/ruler is perpendicular to the floor
- Turn the chair around so your are facing the back of the chair. Measure the horizontal distance between the outside of one wheel to the outside of the other wheel (Figure B). Compare the two distances. If there is more than a 1/8 inch difference between the two, then the wheels are out of alignment.
- To adjust the wheel alignment, the axle/camber tube needs to be rotated until the difference between the front tire distance and the back tire distance (measured above) is less than 1/8 inch. The instructions on how to rotate the axle/camber tube varies depending on the brand of chair you have. Refer to your wheelchair owner's manual for directions on rotating the axle/camber tube, or contact the chair manufacturer or local complex rehab center for help adjusting your wheel alignment.

Note:

- Adjusting toe-in/toe-out does not apply to chairs with 0° camber; however, on some models it may still be necessary to make sure that the camber plug flats are perpendicular to the ground. Check your wheelchair manufacturers manual for more information.

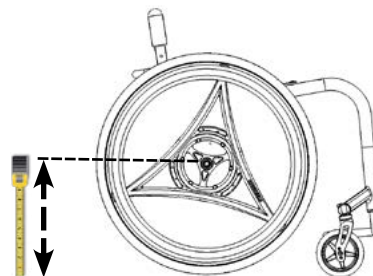


Figure A

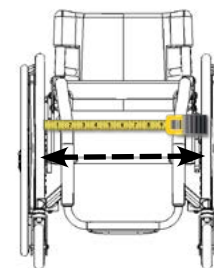


Figure B

TROUBLESHOOTING: FEELS UNSTABLE

Issue(s):

- The chair feels off balance, or you don't feel centered in your chair.
- You feel like you might pull backwards if you pull too hard.
- You have trouble performing a full stroke because your position in the seat is too far forward.

Cause(s):

- When using a Rowheels HX or LX product, the pulling motion will naturally have you sitting up straight and back toward the rear of your chair. This is opposite of the position regular pushing puts you in, which is leaning forward and bent-over towards the front of your chair. If you have the seat adjusted for an optimal pushing position, this may lead to you feeling unbalanced in your chair when using Rowheels.

Solution(s):

- The instructions on how to adjust the center of gravity of your chair varies depending on the make and model of your chair. Rowheels recommends you visit your therapist or a complex rehab center to have your seat position adjusted.

WARNING: It is strongly recommended that antitipping devices be used at all times. Failure to do so may result in serious injury.

TROUBLESHOOTING: RUBBING NOISE

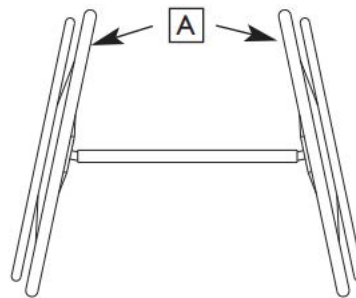
Issue(s):

- Rowheels' tires are coming in contact with some part of your chair or body during propulsion.

Cause(s):

- The camber on the wheelchair is such that it is causing the wheels to rub against components on the chair.
- Components on the chair frame maybe sticking out towards the wheel, creating contact.
- Rowheels Rev Series products should not be used with camber greater than or equal to 6 degrees but it is recommended that the camber not exceed 4 degrees.
- The best way to get rid of tire rubbing is to reduce the camber of the wheel. The procedure for changing the camber is dependent on the type of chair you own. Read and understand your wheelchair owner's manual in order to adjust the camber. Rowheels recommends that contacting a local complex rehab provider or wheelchair manufacturer for assistance in adjusting the chair's camber.

Wheel Camber Angle (A°)



TROUBLESHOOTING: REMOVING WHEELS IS DIFFICULT

Issue(s):

- When attempting to remove a wheel using the quick release feature, it is difficult or remove/ it does not slide out of the axle receiver.

Cause(s):

- The Torque Arm Bolt is wedged too tightly between the latch housing and the latch in the Universal Frame Clamp.

Solution(s):

- Short Term: Use the latch release knob located on the Universal Frame Clamp to relieve the pressure on the Torque Arm Bolt so the wheel can be removed using the quick release.
- Long Term: The Universal Frame Clamp needs to be adjusted. Using a 3/16" hex key, loosen the two bolts in the center of the clamp to make it adjustable. Move the clamp slowly along the frame of the chair away from the axle receiver. The Torque Arm Bolt should be able to successfully swing into the latch without having to engage the latch release knob. The Torque Arm Bolt should sit securely between the latch and the latch housing. Once the Universal Frame Clamp is in the desired position, slowly tighten the two central screws, alternating between screws, until the clamp is secure. Give the wheel a pull to verify that it is secure. Try to remove the wheel using the quick release without engaging the latch release knob. Repeat the process as needed until the desired fit is achieved.

Notes:

- If the need arises, you can move the Torque Arm Bolt to a different position on the Torque Arm for a better fit. Use two 9/16" standard wrenches, one around the hex nut on the bottom of the Torque Arm and one on the Torque Arm Bolt on the top side of the arm. Loosen and remove the nut, and move the Torque Arm Bolt to another position on the Torque Arm. Replace the nut and tighten as securely as possible. Wiggle the bolt to ensure that it is securely fastened.
- For more information, refer to the Rowheels REV Series Owner's Manual and watch this instructional video below.

[INSTALLATION TOO TIGHT VIDEO](#)

TROUBLESHOOTING: CHAIR VEERS LEFT OR RIGHT

Issue(s):

- When propelling or coasting, the chair veers to one side.

Cause(s):

- If using pneumatic tires, one or both may be improperly and unequally inflated.
- Front caster barrels and mounts may be loose.
- If chair has camber greater than zero, toe in/out may be causing issue

Solution(s):

- Ensure that both tires are properly and equally inflated to the correct pressure. If this does not correct the issue, continue to following options.
- Adjust caster barrels and mounts per chair manufacturers instructions on user manual. Rowheels recommends contacting a local complex rehab center or contacting the chairs manufacturer for assistance. If this is not correct the issue, continue to following option.
- Adjust wheelchair frame toe in/tow out using manufacturer's instructions on users manual (Refer to [page 14](#)). Rowheels recommends contacting a local complex rehab center or contacting the chairs manufacturer for assistance.



ROWHEELS

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