



# **GRIT Freedom Chair**

Assembly Guide &

User Manual

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# **Chapter 1**

## **Safety Information**

## **1.1. How to Contact GRIT**

Congratulations on your new, all-terrain GRIT Freedom Chair! This Assembly Guide & User Manual is designed to help you assemble, ride, and maintain your GRIT Freedom Chair. It also contains important safety information, so please read through this guide before riding.

Wherever you go, the GRIT team isn't ever far away. If you have questions, need help, want to brag to us about a recent GRIT Freedom Chair adventure, or are looking for some information about an accessory or resource, below are some ways you can reach us:

- Phone: **617-356-8106**
- Email: **support@gogrit.us**
- Chat Window: ***www.gogrit.us***
- Facebook: [www.facebook.com/GRITFreedomChair](http://www.facebook.com/GRITFreedomChair)

The GRIT office is open Monday-Friday, 9AM-6PM EST.

## **1.2. Safety First**

Riding the GRIT Freedom Chair requires some practice. It will likely take a few rides before you feel comfortable with the motions. After that, you'll be able to work on more technical terrains and maneuvers, build up your strength, and incrementally increase your distance. Every GRIT Freedom Chair rider you've seen online has worked hard over time to be as proficient as they are. It can be tough, but you'll get there, and our team and GRIT community are both here to help.

This guide holds important safety information. Please read through it before starting your first ride.

Like with any mobility device, riding the GRIT Freedom Chair involves the risk of injury. By choosing to ride the GRIT Freedom Chair, you assume responsibility for this risk, so it's important for you to practice safe riding. Safety information can be found in the following formats:

**WARNING:** Warnings indicate a potentially dangerous situation. Failure to heed these warnings could result in serious injury or death. For example:

**WARNING:** TIPPING IS POSSIBLE, especially when going uphill. One way to prevent this is to ALTERNATE lever strokes during ascents, instead of pumping both levers at the same time. Always wear a helmet and ride with a friend who can spot you from behind.

**CAUTION:** Cautions indicate a potentially hazardous situation. Failure to heed these cautions could result in minor or moderate injury. Cautions also indicate unsafe practices and conditions that may damage your GRIT Freedom Chair or void the warranty. For example:

**CAUTION:** Any fall can be dangerous. Always wear a helmet. Always be aware of your surroundings. This manual does not cover every possible dangerous situation or improper use of the GRIT Freedom Chair. You, the rider, are responsible for your own safety and accept all risks associated with using the GRIT Freedom Chair.

### **1.3. Intended Operator**

- In order to safely operate the GRIT Freedom Chair independently, certain levels of upper body strength and control are required. Grip strength is required for braking and turning, but adaptations can be made, such as using *Active Hands* gloves to pull the levers back for braking and turning.
- It is your responsibility to determine if the GRIT Freedom Chair is right for you. If you are unsure, consult with your physical therapist or medical advisors prior to riding the GRIT Freedom Chair.
- The GRIT Freedom Chair comes in several seat widths. Please ensure that you fit comfortably in your GRIT Freedom Chair. If you do not fit comfortably, please contact GRIT.
- The GRIT warranty covers only the original owner of the chair. Subsequent owners will have access to the GRIT support team but will not be covered under the initial warranty.
- You can reach out to GRIT directly at [support@gogrit.us](mailto:support@gogrit.us) or 617-356-8106 to discuss what modifications and adjustments can be made to maximize your performance.

## **Chapter 2**

# **Unboxing & Headset Assembly**

## **2.1. Unboxing**

Your GRIT Freedom Chair was hand-packed by the GRIT team in Massachusetts. Unless otherwise discussed with GRIT, your box contains these parts:

- |                                       |                              |
|---------------------------------------|------------------------------|
| 1. GRIT Freedom Chair Frame & Seatpan | 5. Seat Cushion              |
| 2. Seatback                           | 6. Rear Wheels & Axles       |
| 3. Footplate                          | 7. GRIT Freedom Chair Levers |
| 4. Fork & Front Wheel                 | 8. Any Requested Accessories |



*Depending on the model you have, your parts may look slightly different than the above photo. If you'd like to confirm the components you received, call GRIT at 617-356-8106.*



## 2.2. Unpacking the Box

Save the box! The original packaging is used for returns under the GRIT Guarantee. We hope you love your GRIT Freedom Chair, keep it, and end up recycling the box, but it's helpful to save the box during the first 30-day period.

**Step 1:** Remove the wheels, seatback, levers, footplate, front wheel, and cushion from the box.

**Step 2:** To remove the main GRIT Freedom Chair frame, lift it up to reveal the footplate clamp, which will be securing one of the cardboard inserts. Remove the clamp by loosening the clamp and pulling it away from the chair (try twisting it to free it). Remove the cardboard insert and reattach the clamp. **Note:** The clamp has a lip on it, so it can only be put on the tube in one orientation.

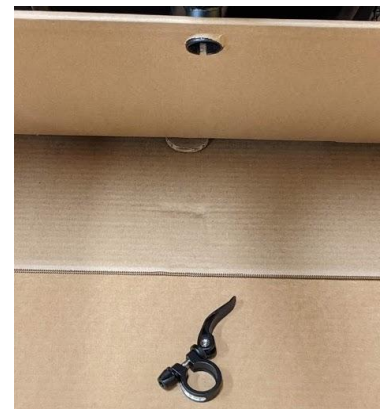
Please use the following images to complete these first 2 steps:



a) The frame is attached to the bottom of the box.



b) Lift the frame to expose the clamp holding it in place.



c) Slide off the clamp to free the frame.



d) Orient the clamp so that the lip is at the bottom.



e) Slide the clamp onto the frame.

## **2.3. Attaching the Fork**

Video instructions are available online at <https://www.gogrit.us/support-center>

To attach the fork, you will need the 5mm Allen key provided with your GRIT Freedom Chair.

Call us at (617) 356-8106 or email us at support@gogrit.us with any questions about the following steps. **Text instructions immediately below, but refer to the following two pages for photos that will help!**

1. Remove the front wheel components from their plastic baggie and match them to the photo on the following page (for easy identification, place the parts right onto the photo).
2. Slide one of the two bearings onto the fork, **curved (*chamfer*) side up**.
3. Insert the fork through the headset tube at the front of the chair.
4. Slide the second bearing, **curved (*chamfer*) side down**, over the fork tube.
5. Slide the compression ring, **cone side down**, over the fork tube and push it down until it contacts the bearing.
6. Slide the bearing cover, **flat side down**, over the fork tube.
7. Separately, on a flat surface, put the top cap (**cone side down**) on top of the spacer.
8. Put the split washer (**either side up**) into the hole in the top cap.
9. Insert the screw through the top cap and the split washer. Grab this whole assembly and put it over the fork. Thread the screw into the fork.
10. Tighten the screw until you start to feel some resistance when rotating the fork. The fork should rotate 360 degrees without much resistance. The screw should be flush with the top cap.

#1: Screw



#2: Split Washer



#3: Top Cap



#4: Spacer



#5: Bearing Cover



#6: Compression Ring



#7: Bearing (note the angled edge)



#8: Bearing (note the angled edge)



***Note:** Components of the fork assembly, shown individually for identification purposes.*



a) Slide the bearing onto the fork, curved (chamfer) side up. Push the fork tube into the Freedom Chair.



b) Slide on the top bearing, making sure the curved (chamfer) side of this bearing is facing down toward the ground.



c) Slide on the compression ring, cone side down, as far down as you can. It doesn't matter which direction the split is pointing.



d) Slide on the bearing cover, flat side down.



e) Put the top cap, cone side down, over the spacer.



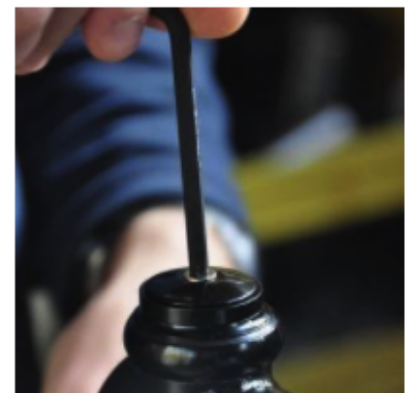
f) Slide the split washer onto the screw.



g) Insert the screw with the split washer through the hole in the top cap. Grab the top cap, spacer, and screw in your hand.



h) Put the top cap, spacer, and screw on top of the headset and thread the screw into the nut within the front wheel fork.



i) Tighten the screw with the provided Allen key until you start to feel resistance when rotating the fork left to right.

## **Chapter 3**

### **Additional Assembly**

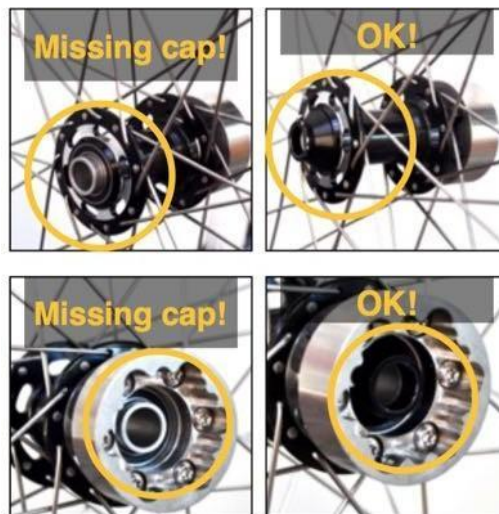
### 3.1. Inserting the Axles

All GRIT Freedom Chairs wheels ship **without** the rear-wheel axles inserted. Inserting the axles through the wheels is easy, and only needs to be done when you're setting up your chair.

**NOTE: For safe shipping, the axles are rubberbanded to the levers themselves.**



Our wheels come with black caps, which ensure proper spacing. Look at the below images for reference.



**Note:** Right side images show proper black caps. The coupling can be seen in the lower images.

Once you confirm the black caps are secure, insert the axles into the rear wheels!

First, slide the axle into the hub from the side opposite the stainless-steel coupling (the coupling is the wide, silver ring). You'll have to press the button at the end of the axle to push it

through the hub. Make sure that the black hub caps do not fall off. There should be a black cap on both sides of the hub. If the caps fall off, simply press them back on. That's it!

### **3.2. Attaching the Rear Wheels**

Once the axles are inserted through the rear wheels, attach the rear wheels! Follow the process below.

**Note:** The side of the wheel with the wide, silver ring (coupling) connects to the chair.



a) Press the quick-release button on the axle inward.



b) Align the axles with the axle receiver.



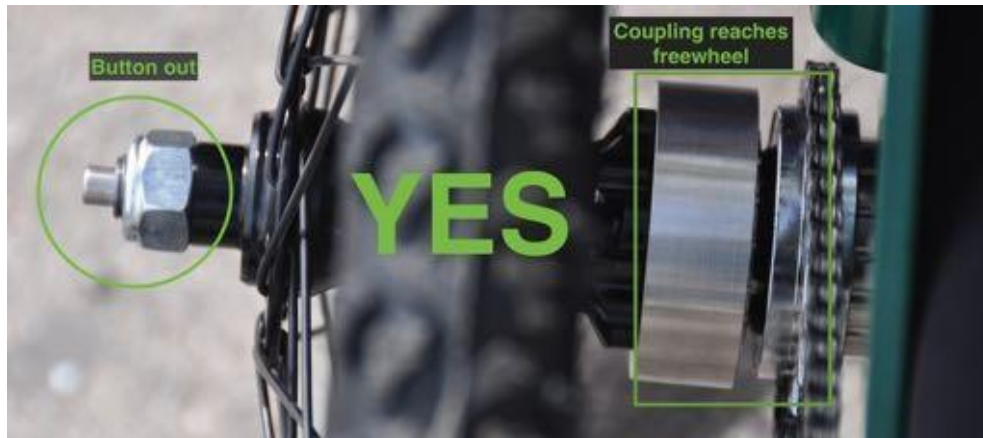
c) Align the grooves on the coupling and insert the axle.



d) Ensure the push-button on the axle is out and the coupling is fully attached.

**Note:** Sometimes, the coupling can be misaligned, and the wheel will not fully attach (you'll know this is happening if the axle push-button won't push out). To fix this, rotate the chain until the slots of the coupling and the freewheel are aligned. The wheels are securely attached when the push-button on the axle pops out (see photos on following page).

**WARNING:** ALWAYS ENSURE THE AXLE BUTTON IS POPPED OUT AND THE COUPLING REACHES THE FREEWHEEL. Riding the GRIT Freedom Chair without the wheels fully attached could cause a wheel to fall off the chair, causing a crash and fall and may result in serious injury or death.



**Note:** If the push-button is depressed and the coupling does not reach the freewheel, the chair is not safe to ride.



**Note:** By design, the spacing **will be slightly different** between the coupling and the freewheel on the right and left sides of the chair. This is okay! If unsure about the connection, try pulling the wheel off to check whether it is correctly locked in place.



### 3.3. Attaching the Seatback

The seatback slides into the seat and secures with push buttons. **Slowly insert both sides of the seatback at the same time** to prevent it from jamming.

**CAUTION:** Make sure the seatback is fully inserted and the push buttons are popped out. Riding the GRIT Freedom Chair without fully inserting and locking the seatback could cause damage to the seat, and may cause risk of injury.



a) Slide the seatback into the receiving sockets on the back of the seat. Keep the seatback level while you slowly insert it into the sockets.



b) With your fingers, push the spring buttons inward **on both sides of the seatback** while lowering the seatback into the seat.



c) Slide the seatback down until the push buttons pop out on both sides.



d) Press the magnets of the privacy flap to the metal of the seatpan.

## **If the Seatback Becomes Stuck**

Sometimes, the seatback can be hard to insert or remove. This happens when: The seatback tubes are not pushed into the seat simultaneously, if the canes on the seatback are bent, or if the receiving sockets are misaligned or bent.

**To release a jammed seatback:** Tap one side of the seatback with the base of your hand upward or downward. If this is a continuing issue, please contact GRIT at support@gogrit.us and we will assist.

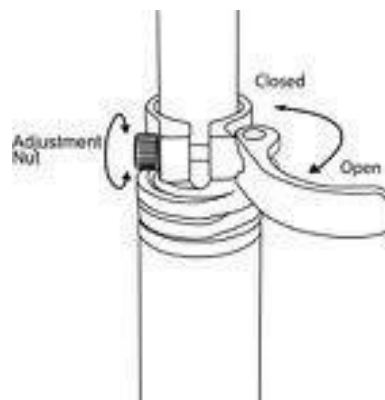
**If your seatback doesn't insert or align with the receiving sockets:** Check for damage to the top of the seatpan, the canes, and the receiving sockets themselves. Call GRIT at 617-356-8106 or email [support@gogrit.us](mailto:support@gogrit.us) immediately.

Note: Keep your seatback tubes lubricated so they slide easily into the seat. We recommend using a Teflon-based lubricant like *Tri-Flow*.

## **3.4. Attaching the Footrest**

The footrest attaches to the GRIT Freedom Chair using the same clamp used on bicycle seats. The footrest tube is inserted into the chair and then the clamp lever is used to lock the tube in place. The tightness of the clamp can be adjusted with the adjustment nut opposite the clamp lever. **See the following page for photos that will help with attaching the footrest.**

**CAUTION:** If the footrest is loose or sways side to side, the clamp is not tight enough.



*The adjustment nut controls the tightness of the clamp. Pull the lever outward to open the clamp so the footrest can be inserted and removed. Push the lever inward to close the clamp so the footrest is held in place.*



a) Ensure the footrest clamp is open and loose enough for the footrest to slide in easily.



b) Insert the footrest tube with the footrest facing forward.



c) Slide the footrest tube into the frame until it is at an appropriate height.



d) Lock the clamp in place by pressing the lever down against the footrest tube.

## **3.5. Fit and Seating**

- **Seatbelt**

The GRIT Freedom Chair ships with a seatbelt included and attached to the seatpan. It may be tucked beneath the seat cushion. We recommend riding with a seatbelt.

- **Foot Straps**

The footrest plate has slots to add your own foot straps. You may use these to secure your feet into the footrest. GRIT also has straps available for purchase.

- **Leg Straps**

Leg straps may be used to hold your legs together, which can improve clearance for your lever strokes. We recommend Neoprene straps, though Velcro also works well.

- **Strap-Mounting Holes**

The sides of the GRIT Freedom Chair seatpan have pre-drilled holes. These holes may be used to add additional straps.

- **A Note On Cushions**

- The GRIT Freedom Chair ships with a wheelchair-style comfort cushion. The cushion is not a pressure-relief cushion. Some riders choose to add their own cushions; please consult with your physical or occupational therapist to see if this cushion is appropriate for you.
- The GRIT Freedom Chair seat is sized to accept standard wheelchair cushions, including pressure-relief cushions.
- All sizes of the GRIT Freedom Chair have a 16-inch seat depth. Velcro may be applied to the seatpan to appropriately secure your cushion.
- Some riders have benefited from stacking multiple cushions in the GRIT Freedom Chair to achieve a taller rider position. **Note:** Adding or removing cushions will adjust your center of gravity, potentially increasing the risk of tipping.

**CAUTION:** Riding the GRIT Freedom Chair with an inappropriate cushion may result in pressure-related injuries. Consult with your occupational therapist to make sure your GRIT Freedom Chair cushion is right for you. Always wear closed-toed shoes when riding the GRIT Freedom Chair.

**CAUTION:** If using the footplate, make sure your feet do not slide forward, into, or against the front wheel. See photos below.



*Ideal foot position when operating the GRIT Freedom Chair.*



*Ideal position, shown with optional Foot Strap.*

**Note:** The slots on the sides of the footplate are for optional foot straps. GRIT can provide these, but you can use your own velcro straps if you'd like.

## **Back Pad**

The GRIT Freedom Chair back pad is designed to rest in the rider's **upper back**, between the shoulders. Brace against the back pad during your push stroke to increase your power and reduce fatigue.



## **Chapter 4**

# **Disassembly**

## 4.1. Removing the Rear Wheels

The rear wheels of the GRIT Freedom Chair can be easily removed with their quick-release push-button axles.



a) Grab the wheel near the hub and push the axle button inward.



b) Pull the wheel straight away from the chair while keeping the button pressed.

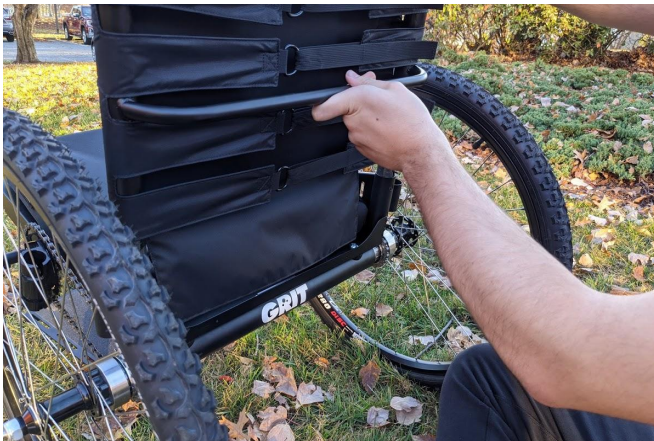


## 4.2. Removing the Seatback

To remove the seatback, push in both buttons while lifting upward on the seatback. Be sure to **pull both sides of the seatback at the same time** to prevent the seatback from getting stuck.



a) Simultaneously push in the buttons on both sides of the seatback.



b) Hold both buttons in while pulling upward on both sides of the seatback.



c) Continue pulling upward on both sides of the seatback until it is released.

### **4.3. Transporting the GRIT Freedom Chair**

The GRIT Freedom Chair is designed to be disassembled and transported by car. Our riders have packed their GRIT Freedom Chairs into compact sedans, pickup trucks, minivans, SUVs, and almost everything in between!

Some pointers to ensure your GRIT Freedom Chair arrives at the trailhead in peak riding condition:

- Put the main frame of the chair into the trunk first. It is the heaviest part, so avoid placing it on top of the other parts. Place the frame flat to avoid bending the side of the seat.
- Most folks will leave the footrest on their chair, but it can be removed if desired.
- Keep the chains clean. Dirt and gravel in the chain will impact your riding performance and drivetrain life.
- Avoid metal-on-metal contact to prevent scratches.
- Remove the levers from their storage position to keep them from falling out during transit.



***Note:** Avoid having anything press into the sides of the seatpan.*

# **Chapter 5**

## **Riding**

## **5.1. Safety**

It is important that you **practice riding the GRIT Freedom Chair on smooth, flat ground until you feel confident**. Be sure you have enough space to safely experiment with the controls. While practicing in the GRIT Freedom Chair, avoid areas containing rough terrain, steep slopes, automobile traffic, or open water.

**WARNING:** PRACTICE RIDING THE GRIT Freedom Chair IN A SAFE AREA UNTIL YOU ARE COMFORTABLE. Do not ride in areas containing rough terrain, steep slopes, automobile traffic, or open water until you have become proficient with stopping and turning the GRIT Freedom Chair.

**WARNING:** Riding the GRIT Freedom Chair without the ability to actuate the brakes could result in loss of control, injury, and even death. Make sure the rider can use the brakes before going downhill.

**CAUTION:** YOU CANNOT MOVE BACKWARD WITH THE LEVERS INSERTED. The GRIT Freedom Chair is designed to prevent you from rolling backward during inclines. To move backward, remove one or both of the levers and pivot/reverse as desired. You can store the levers in the storage slots located at the rear sides of the seatpan.

## **5.2. Pre-Ride Safety Checks**

It is extremely important to inspect your GRIT Freedom Chair before each ride to make sure it is in trail-ready condition:

1. Ensure the wheels are correctly attached and the axle push buttons are popped out.
2. Ensure that the tires are properly inflated. We recommend 45 PSI for all three tires.
3. Check that the seatback is fully inserted and the push buttons are popped out.
4. Ensure that the footplate is attached securely.

**WARNING:** It is your responsibility to ensure you are properly secured within the GRIT Freedom Chair. Please consult with your physical or occupational therapist to ensure that you are correctly secured in the GRIT Freedom Chair. Failure to properly secure yourself in the chair could result in a fall.

### **5.3. Safety When Riding**

We encourage you to exercise your best judgment to determine whether a specific activity in the GRIT Freedom Chair is safe for you. Every rider is different; do not attempt an unsafe activity that you have seen other riders perform in the GRIT Freedom Chair. Here are some useful tips for safe GRIT Freedom Chair riding:

- Ride with someone who can assist you from behind the chair. Braking, turning, and propulsion can take some time to master; a little assistance can go a long way.
- Practice riding the GRIT Freedom Chair in a safe area.
- Be careful when descending hills.
- Be careful when climbing hills to ensure you do not tip backward. We recommend climbing hills with a spotter behind the chair. Alternate lever strokes when climbing hills (left, then right, then left, etc.) to keep the front wheel safely on the ground.
- Ride with the seatbelt.
- Riding in wet weather decreases the brake performance. Be careful if you notice the brakes getting wet. **If pulling back on the levers doesn't provide the necessary braking power, "hug" the levers by putting them in the crooks of your arms and pulling them toward your body.**
- Ride with a helmet.
- Wear high-visibility clothing, reflectors, and lights when riding in low-light conditions.

### **City Riding**

When riding in city areas or where other vehicles may be present, be mindful of the low height and added length of the device. Visibility additions, such as flags and reflectors, may be appropriate to ensure that you can be seen in the GRIT Freedom Chair by cars and cyclists.

## **Night Riding**

Visibility is especially important when riding at night. The GRIT Freedom Chair has a loop on the rear of the back pad for mounting a rear bike light. We also recommend using reflective decals, high-visibility clothing, and a reflective flag when night riding.

## **Riding in Wet Conditions**

Riding in wet weather impacts the braking performance. The stopping distance is increased in wet conditions, so **use extreme caution on wet hills.**

## **Trail Riding**

Bring plenty of water, some snacks, and a friend who can assist. Tell others where you are going and when to expect you to return. Bring your cell phone. **Do not ride the GRIT Freedom Chair alone in the woods.**

# **Chapter 6**

## **Using the Levers**

## **6.1. Inserting & Removing the Levers**

The lever drivetrain provides great outdoor performance but may limit your maneuverability indoors. We designed the levers to be easy to insert and remove. The levers are interchangeable and store on the GRIT Freedom Chair when not in use.

### **Inserting the Levers**

- First, retrieve the levers from their storage positions on the sides of the chair.
- Lift the levers from the front and the back. If both hands cannot be used, lift the lever from the center.
- Then, insert the end of the lever into the hole in the lever coupling. Note: you may need to rotate the lever coupling so that the hole is accessible (see photos on following page).
- Rotate the lever so that the brake bar is over the wheel. Some riders prefer to insert the levers with the parking brake engaged. This is up to the rider's preference.



**Note:** Lift the lever by grabbing at the front and back.

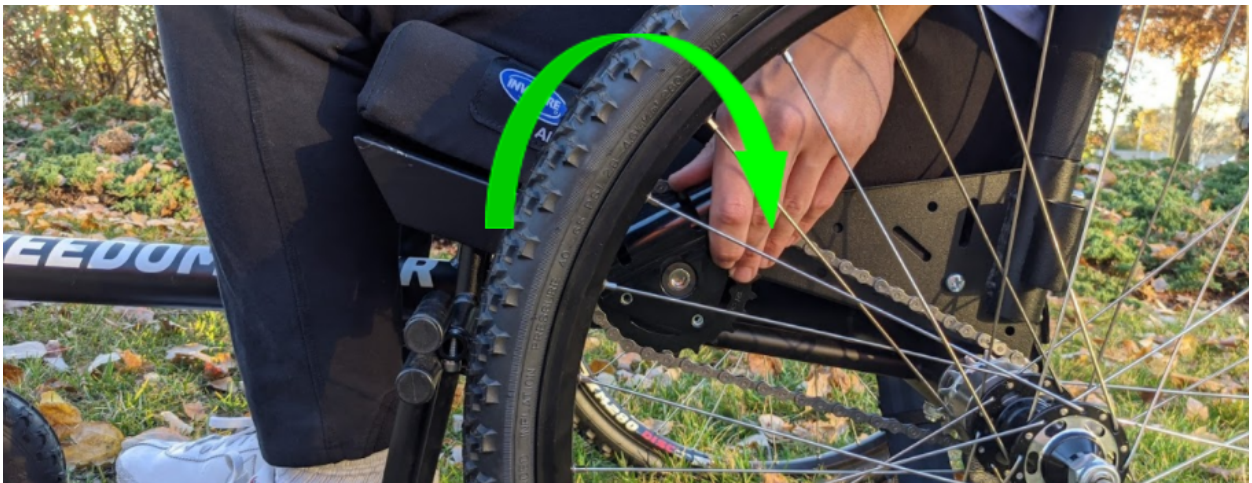




a) If the endcap is visible, rotate the coupling.



b) If the lever hole is inaccessible, rotate the coupling.



**Note:** Rotate the coupling toward the back of the chair by pushing down on the back of the coupling with your hand or the lever. Spin it all the way around so the hole in the coupling is facing forward (see the following photo).



a) Coupling forward: The ideal position for inserting levers.



b) Insert the lever into the coupling hole until the pin reaches the bottom of the slot.



c) Rotate the lever in the coupling (as shown above).



d) Make sure the brake is over the wheel and that it doesn't rotate when the lever is pulled back.

**WARNING:** TEST THE BRAKES BEFORE RIDING. Make sure the levers are fully inserted and the brakes engage the wheels before every use. Failure to check the brakes can result in an inability to safely slow down and can create a dangerous scenario. Make sure the levers are fully inserted into the lever couplings before proceeding.

## Removing the Levers

To remove the levers, push them slightly forward and then rotate them in your hands so the brakes move toward the center of the chair. Then pull them out of the couplings. Store the levers on the side of the chair.



a) Push the lever away from the wheel.



b) Rotate the brake bar toward yourself.



c) Pull the lever out of the coupling.



d) Insert the brake into the lever holder.

## **6.2. Propulsion**

Push the levers forward to propel yourself in the GRIT Freedom Chair. Pull the levers backward to reset the lever position and to engage the brakes.

Note: You can **push the levers forward together or alternately**. Many riders prefer to push the levers at the same time on smooth ground and to alternate the levers on hills and rough terrain. **Below, see photos of proper lever engagement.**

**WARNING:** TIPPING IS POSSIBLE. This is especially true when going uphill. One way to prevent this is to ALTERNATE lever strokes (left, right, left, etc.) during ascents, rather than engaging both levers simultaneously. On severe inclines, lean forward, if possible, to adjust your center of gravity. Always wear a helmet. Always ride with a buddy who can help if exploring new or unfamiliar terrain. Anti-Tip Bars are available upon request.

**CAUTION:** Use short, smooth strokes on the levers. Keep your back against the seatback, if possible. Abrupt push strokes can cause the front wheel to tip upward, which may cause you to tip over backward.





**Note:** Push forward on the levers to move forward. You may push the levers together or alternately. Once the levers are forward, pull them back to reset for the next stroke.

### **6.3. Maximizing Your Speed and Leverage**

The GRIT Freedom Chair drivetrain is designed to allow riders to vary their mechanical advantage based on where they grab the lever. Grabbing the top of the lever provides more torque for climbing hills and rough terrain (think of this as “low gear”). Grabbing the bottom of the lever enables easy propulsion over smooth ground (think of this as “high gear”).

“Shift gears” by changing your hand position on the levers. Slide your hands to match the riding conditions (see following photos).

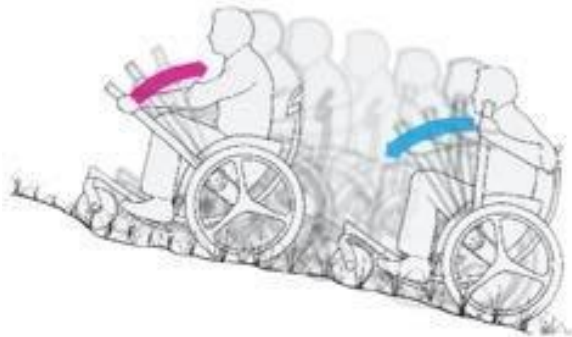


a) Grabbing the top of the levers is like **low gear** and is good for hills and tough terrains Use many small, alternating lever strokes to climb hills.



b) Grabbing the bottom of the levers is like **high gear** and is good for smooth ground. Push through long strokes to move quickly.

Grabbing the bottom of the lever enables **easy travel on roads.**



Grabbing the top of the levers provides **leverage to climb hills** and rough terrain.

## **Chapter 7**

# **Freedom Chair Techniques**

## **7.1. Braking**

Pull backward on the levers to apply the brakes. The brakes work when the brake bar on the lever comes into contact with the tire.

It is normal for this to wear out the powder coat on the brake tube. It will not wear down the tires—in fact, the levers will wear down first. **Note:** While a worn-off powder coat isn't a problem, please contact GRIT if you wear away a hole in the lever itself.

For added braking force, **pull backward from the top of the levers**. This provides more leverage and much better brake performance. You can also “hug” the levers by putting them in the crooks of your arms and pulling them toward your body.

**WARNING:** WET CONDITIONS DECREASE BRAKING PERFORMANCE.

Use caution when riding in wet conditions. Wet tires require more braking force for stopping. Riding in wet conditions without the ability to apply the braking force required for stopping could result in a loss of control, which could result in a collision or a fall.

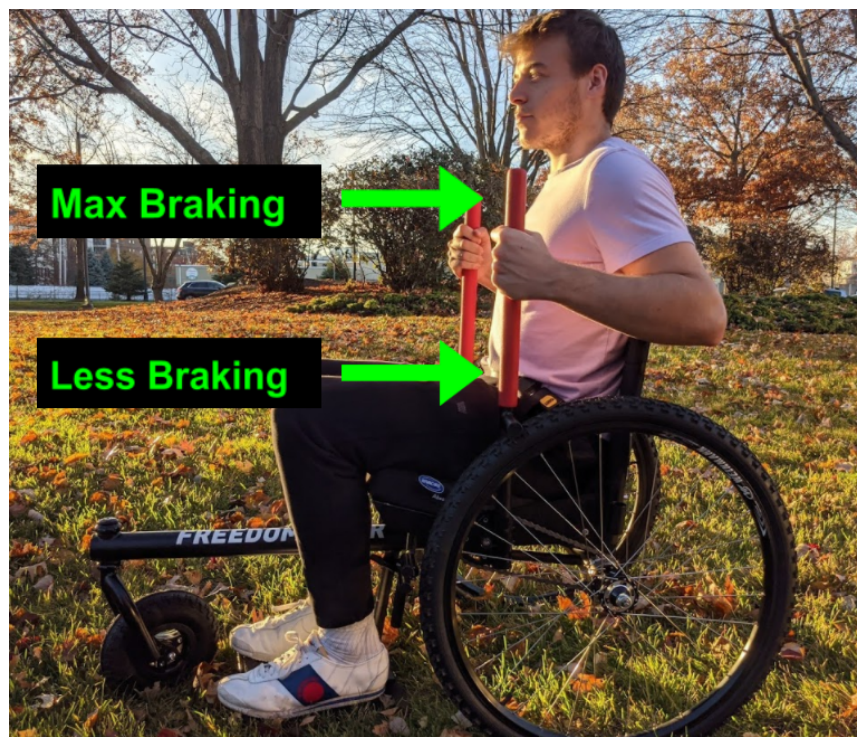


**Note:** Pull backward on the levers to engage the brakes.





**Note:** The brakes engage by coming into contact with the tire.



**Note:** Pulling backward on the top of the levers provides more braking force, which is especially useful when the wheels are wet.

## **7.2. Turning**

Turning the GRIT Freedom Chair is similar to turning a rowboat or skid-steer.

To turn, apply the brake on the wheel closest to the direction you want to turn and push on the other lever. Example: To turn right, apply the right brake and push on the left lever. To turn left, apply the left brake and push on the right lever. The harder you pull against either lever, the sharper you will turn.



a) To turn right, apply the brake with the right lever and push the left lever forward.



b) To turn left, apply the brake with the left lever and push the right lever forward.

### 7.3. Reversing

The GRIT Freedom Chair has a unique **hill-hold** braking feature. Rolling the chair backward rotates the levers backward, which engages the brakes. This prevents the rider from rolling backward down a hill.

As a result of the hill lock, however, the GRIT Freedom Chair is unable to move backward with the levers inserted. We designed the levers to be easy to remove. If you remove them you will be able to roll backward.

Depending on the scenario, you may be able to remove a single lever, pivot on the wheel on that side, and then re-insert that lever to propel forward. When the levers are removed, you can put your hands on the wheels and use the GRIT Freedom Chair just as you would a regular wheelchair.

### 7.4. Parking Brakes

**CAUTION:** You'll have to adjust the parking brakes when swapping wheelsets! Check out Chapter 10 for Parking Brake Adjustment step-by-step instructions.

The GRIT Freedom Chair features unique parking brakes designed to be stronger and more reliable than standard wheelchair brakes.

Always apply both parking brakes, as the application of a single parking brake does not guarantee that the chair will not move.



- a) Push down on the parking brake to disengage.
- b) Parking brake in the off position. Chair can move.
- c) Pull up on the parking brake lever to engage.
- d) Parking brake in the on position. Chair is stopped.

The parking brakes can be adjusted if they seem too loose or too tight. A correctly fit parking brake will lock the wheel with the minimum pull force required. For more information about our parking brakes, see: <https://www.gogrit.us/support-center>

**Note:** Be sure to release the parking brakes before using the lever drivetrain!

## **7.5. Transferring**

There are a number of ways to transfer in and out of the GRIT Freedom Chair. Use whatever technique works for you. Our riders have recommended the following tips:

- Always engage the parking brakes before transferring into the GRIT Freedom Chair.
- Remove and store the levers before transferring.
- When transferring into the chair, many prefer to transfer into the seat before swinging one leg over the main tube of the GRIT Freedom Chair.
- When transferring out of the chair, many prefer to swing both legs over to the transfer side of the chair before making the transfer.
- Grab the seat or the wheels (after the parking brakes have been engaged) to help with transferring.
- The footrest may be lowered prior to transferring to make clearance.
- The front tube is a useful grab point when transferring from low positions or the ground.
- You may use your own cushion in the GRIT Freedom Chair or stack your cushion on the provided cushion for a higher riding position.
- For transfer videos from other riders, see: [www.gogrit.us/faq#transfer](http://www.gogrit.us/faq#transfer)

**CAUTION:** Use caution when transferring, as an improper transfer may result in a fall.  
ALWAYS ENGAGE THE PARKING BRAKES WHEN TRANSFERRING.

# **Chapter 8**

## **Advanced Techniques**

## **8.1. Climbing Hills**

We recommend using **short, alternating strokes** when climbing hills. This makes slow constant progress up steep hills and helps keep the front wheel planted on the ground.

Some other tips:

- Steady momentum is your friend. Keep a slow and steady pace.
- Do not ride directly up a steep hill. Instead, zigzag up the hill.
- If possible, lean forward to move your center of gravity farther forward, this prevents tipping.
- Do not push the levers too far away from yourself. You'll have an easier time pushing if the levers are closer to your body.
- Resist the urge to make long strokes. Use short, alternating strokes.

The GRIT Freedom Chair's hill-hold feature will engage if the chair rolls backward more than a couple of feet (depending on the lever position). Use this to rest your arms between push strokes, but do not allow the chair to build up backward momentum.

**WARNING:** THE GRIT Freedom Chair CAN TIP BACKWARD, ESPECIALLY ON STEEP HILLS AND WITH HARD PUSH STROKES. Be careful to monitor the front wheel when climbing hills. If the front wheel lifts off of the ground, the GRIT Freedom Chair is beginning to tip. Always ride with a helmet.

## **8.2. Descending Slopes**

Pull backward on the brake levers to descend slopes at a safe speed. Here are some tips for descending slopes:

- Pull back on the tops of the levers to get maximum braking force. Also try the “hugging” method of positioning your levers in the crook of your elbow and pulling the levers toward your chest.
- Avoid descending straight down steep hills.
- Lean backward in the chair to shift your weight over the bigger rear wheels.
- Avoid extended periods of descent, as this could overwork the brakes.

- Do not descend hills when the wheels and brakes are very wet or covered in wet mud. Braking performance decreases when wet.

**CAUTION:** WET CONDITIONS DECREASE BRAKING PERFORMANCE. Use caution when riding in wet conditions. Wet tires require more braking force for stopping. Riding in wet conditions without the ability to apply the braking force required for stopping could result in a collision or a fall.

### **8.3. Curbs**

It is possible to ride the GRIT Freedom Chair down curbs, as long as the chair is ridden **straight off the curb and not at an angle**. Here are some tips:

- Ride straight off of the curb, not at an angle.
- Make sure you have enough space in front of the curb to safely ride off of it. Watch out for traffic, pedestrians, and obstacles!
- If possible, use the levers to lift the front wheel up just before dropping off of the curb. This more evenly distributes weight across the three wheels.

**WARNING:** DON'T RIDE OFF CURBS AT AN ANGLE. Riding off of a curb at an angle will cause the GRIT Freedom Chair to tip, which may result in a serious fall. Never allow only one of the rear wheels to fall off of a curb.

## **Chapter 9**

# **Maintenance**



## **9.1. Caring for Your GRIT Freedom Chair**

Caring for your GRIT Freedom Chair is just like caring for a bicycle. Here are some tips:

### **Always:**

Keep your GRIT Freedom Chair out of the rain when not in use. The frame is zinc-plated and covered with a high-quality powder-coat, but excessive exposure to rain and moisture will decrease the life of the frame. If it gets wet, dry it with a clean towel. Keep the bearings and other moving parts free of sand and fine particles.

### **Before Every Ride:**

Check to make sure the tires are not flat. Make sure the chains are greased and not sagging. If there is dirt on your chains, clean and re-grease them. Confirm that parking brakes are adjusted for your tires.

### **Every Two Weeks:**

Inflate your tires. 45 PSI is a safe amount for all three tires. Otherwise, stay within the ranges inscribed on the sidewalls of each tire.

### **Every Month:**

Make sure the chains are greased; tighten them if necessary. Engage the wheels and drivetrain to confirm everything is moving smoothly.

### **After a Beach Trip:**

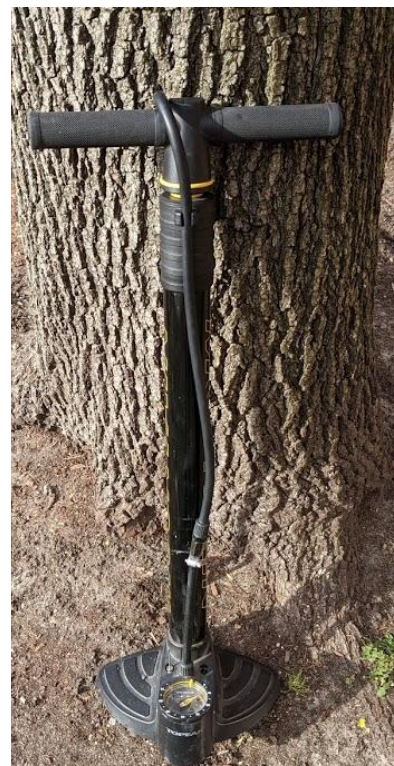
Remove the seat cushion and hose the chair down with fresh water to clean off the salt and sand from the frame, chain, and wheels. Grease the chain after hosing it down. Dry your chair with a clean towel. Submersing or pressure-washing the GRIT Freedom Chair can affect the powdercoat and displace the grease in bearings, so take care to inspect rotating parts if you do this.

## **9.2. Handy Tools**

Be prepared, wherever your adventure takes you. Here is a full list of the tools you may find yourself wanting:

- **Phillips screwdriver.** The first tool in adjusting chain tensioning. Tip size #3 is best. A 3” shank or longer will allow you to access the tension screws.
- **Adjustable wrench.** This is the second tool you'll need for chain tensioning (a dedicated 13mm wrench is best, but pliers can also work).

- **Allen (hex) keys.** Common sizes: 5mm (to tighten the headset and adjust parking brakes). Check if you need these less-common sizes: 6mm (to tighten clamping Trail Handles), 4mm (to remove some parking brake handles).
- **Bike pump.** Always make sure your air is filled to the correct pressure for the terrain you are riding (45 PSI is safe for all three tires). Schrader valves (not Presta) come standard on the GRIT Freedom Chair (the same valve as car tires).
- **Backup tubes.** Rear tires: 3.0 (Standard Mountain Bike Tires) – 26" x 1.75" (ISO 559), Spartan (Beach and Snow Tires) – 26" x 2.25" (ISO 559), Pro – 26 x 2.0". Front tire: 2.80"/2.50"-4".  
*Note: Tire levers can help make tire removal and tube change even easier, and patches can help if you don't have a tube.*
- **Electrical tape.** If your levers are wrapped in tape (not lever sleeves) a strip of electrical tape will keep them from unraveling.
- **Lubricants.** These keep your chain and other parts moving extra smoothly. GRIT commonly uses "Tri-Flow" brand PTFE lubricant on the chain and seatback.
- **Water/snacks.** Using the GRIT Freedom Chair is a workout! Make sure you stay hydrated and energized. Carry these in a small bag on you with your other tools. Some bike bags and water-bottle cages work well, too.



**Note:** The above tools can fit in a backpack or small trail bag attached to the boom of the GRIT Freedom Chair.

# **Chapter 10**

## **Common Adjustments**

## **10.1 Inflating the Wheels**

It is important to keep the tires at the recommended pressure to prevent flats caused by under-inflation. Do not over-inflate the tires.

On soft, sandy ground, riding with lower pressure (but still at or above the minimum pressure) will provide more traction. On pavement, riding with higher pressure (but still below the maximum pressure) will reduce rolling resistance and make the chair easier to push.

We recommend 45 PSI for balanced performance over all terrains.

## **10.2. Chain Tension Adjustment**

The GRIT Freedom Chair uses a standard bicycle chain. Which you should expect to have to periodically tighten due to chain stretch. Riders have to make this adjustment early on (new chains stretch the most) and then a couple of times per year, often after heavy use.

Your chain is too loose if you can squeeze it together more than half of an inch or if you're experiencing a delay in your lever engagement. The video on this page shows you the full chain-tensioning process: <https://www.gogrit.us/support-center>.

## **10.3. Parking Brake Adjustment**

The parking brakes can be adjusted to make them tighter (more braking power) or looser (easier to engage the brakes). If you use the sand/snow wheels for an extended period of time, you may want to adjust the parking brakes so that they fit the wheels better.

A video tutorial of this process is located here: <https://www.gogrit.us/support-center>.

## **10.4. Changing the Gear Ratio**

The GRIT Freedom Chair gear ratio can be adjusted in two ways: by changing the chainring size, or by changing the freewheel. We recommend changing the chainring size since it's a simpler process, but both can be easily done at a bicycle shop.

To make the GRIT Freedom Chair easier to push (but slower), swap the chainring with a smaller one, or swap the freewheel with a larger one.

To make the GRIT Freedom Chair faster (but harder to push), swap the chainring with a larger one, or swap the freewheel with a smaller one. Both of these adjustments may require you to add or remove links to the chain in order to keep your center of gravity the same.

For detailed instructions, contact GRIT at [support@gogrit.us](mailto:support@gogrit.us) or 617-356-8106.

## **Chapter 11**

### **Warranty Information**

## **11.1. GRIT Freedom Chair Design & Support**

Every GRIT Freedom Chair is hand-assembled and certified by our engineering and design team in Massachusetts. We've tested the GRIT Freedom Chair extensively in the lab, in the field, and with the help of wheelchair riders around the world. This being said, unexpected things happen, and we want to be there for you when they do.

If you have any issues with your GRIT Freedom Chair, you can contact us directly at [support@gogrit.us](mailto:support@gogrit.us) or 617-356-8106.

We are the designers of the product and we'll do everything we can to make things right. In short, our two-year warranty covers repairs or replacements of all non-wear components of the GRIT Freedom Chair manufactured by GRIT, subject to the terms below. Wear parts, such as tires, tubes, brakes, and bearings, are not covered.

## **11.2. GRIT Limited Warranty**

Every GRIT Freedom Chair is hand-assembled and certified by our engineering and design team in Massachusetts. We have tested the GRIT Freedom Chair extensively in the lab, in the field, and with the help of wheelchair riders around the world.

Every component has been extensively prototyped and refined based on our combined 30+ years of experience designing mobility aids for some of the most extreme environments in the world. That being said, unexpected things happen, and we want to be there for you when they do.

To review the full GRIT Warranty and all terms, see <https://www.gogrit.us/warranty>.

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Always feel free to call us at 617-356-8106 or email us at [support@gogrit.us](mailto:support@gogrit.us). Until then, enjoy the ride in your GRIT Freedom Chair!

