

Quickie® Mach 2

User

Instruction

Manual &

Warranty

SUPPLIER:
THIS MANUAL MUST BE GIVEN TO THE RIDER OF THIS
HAND-CYCLE.

RIDER:
BEFORE USING THIS HAND-CYCLE READ THIS ENTIRE
MANUAL AND SAVE FOR FUTURE REFERENCE.



www.sunrisemedical.com

I. INTRODUCTION

QUICKIE LISTENS

Thank you for choosing a Quickie hand cycle. We want to hear your questions or comments about this manual, the safety and reliability of your hand cycle, and the service you receive from your Quickie supplier. Please feel free to write or call us at the address and telephone number below:

Sunrise Medical

Customer Service Department
7477 East Dry Creek Parkway
Longmont, CO 80503
(303) 218-4500

Be sure to return your warranty card, and let us know if you change your address. This will allow us to keep you up to date with information about safety, new products and options to increase your use and enjoyment of this hand cycle. You will also receive a free subscription to Quickie Chronicles, a newsletter just for Quickie users. If you lose your warranty card, call or write and we will gladly send you a new one.

FOR ANSWERS TO YOUR QUESTIONS

Your authorized Quickie supplier knows your hand cycle best, and can answer most of your questions about chair safety, use and maintenance. For future reference, fill in the following:

Quickie Supplier: _____

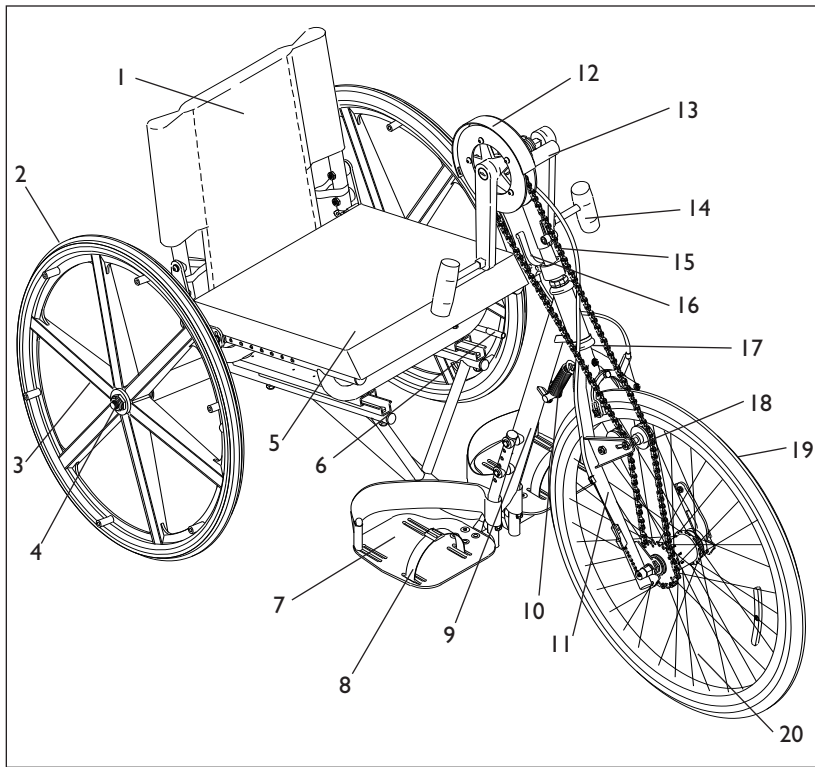
Address: _____

Telephone: _____

Serial #: _____ Date/Purchased: _____

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Shadow Mach 2

- | | |
|------------------------------|-----------------------------|
| 1. Backrest | 11. Front wheel fork |
| 2. Rear wheel | 12. Chain guard |
| 3. Spoke rim | 13. Handles |
| 4. Quick-release axle | 14. Brake cable |
| 5. Cushion | 15. Head set |
| 6. Seat adjustment lever | 16. Chain |
| 7. Angle-adjustable footrest | 17. Guide pulley wheel fork |
| 8. Toe straps | 18. Front wheel |
| 9. Main frame | 19. Cog set |
| 10. Compensator | 20. Lower derailleur |

Gears

- 7 speed
- 3 speed

Hand-Crank Height

- Std (19"-21 1/2")
- Opt - short (16"-17 1/2")

Frame Length

- Std, short

Colors

Blue, black, red, midnight purple, teal, pearl pink, lavender, forest green, burgundy, yellow, blue green, candy teal, candy razzberry, candy purple
 Custom splatters: black, teal chase, purple chase

Handles

- Std - vertical (1 3/8" diameter)
- Opt - vertical small (1 1/4" diameter), horizontal, easy power quad, handle position: row, crank

Frame Dimensions

- Seat width: 13"-20"
- Seat height: 20 1/2", 22 1/2"
- Adjustable seat depth: 12"-16"
- Cushion 2" or 3"

Backrest

- Std - fixed
- Opt - folding
- Back height: 14", 17", 20"

Footrest

- Angle-adjustable, toe straps
- Extension tubes: short, standard

Front Wheels

- Type: spoke
- Sizes: 24", 26"
- Tire type: Black pneumatic 24", black pneumatic (Fat Boys) 26", high-performance clincher, tire sealer (no flats)

Rear Wheels

- Type: mag, spoke
- Size: 24", 26"
- Tire type: Black pneumatic 24", black pneumatic (Fat Boys) 26", high-performance clincher, tire sealer (no flats)

Axles

- Std - threaded
- Opt - quick-release

All features may not be available in conjunction with another hand-cycle feature. Please consult your authorized Quickie Sports Center for more information. Your authorized Quickie Sports Center can also provide you with more information on Quickie accessories and Quickie clothing.

IV. NOTICE

A. CHOOSE THE RIGHT CHAIR & SAFETY OPTIONS

In each of the sections that follow you will find important instructions for your safety. The words warning and caution alert you to specific risks of personal injury or property damage. They mean as follows:

WARNINGS

A hazard or unsafe practice that may cause severe injury or death to you or to other persons.

CAUTION

A hazard or unsafe practice that may cause damage to this hand-cycle or to other property.

V. RIDING SAFELY - READ BEFORE USE

A. BEFORE YOU RIDE

The Shadow Mach 2 has the potential to help you become more mobile and physically fit. Because the Shadow Mach 2 will give you an aerobic workout, we strongly advise that you check with your physician before starting to ride. They can advise you, and give approval for your intended exercise level and duration.

B. PROPER FIT

For proper function as well as safety the Shadow Mach 2 must be adjusted for your body. Here are some guidelines for proper fit.

1. Legs and Feet

Your feet should be able to rest on the footplates. The adjustable straps should be used to hold your feet in place while you ride. For safety, feet should always be kept within the confines of the footplates. When seated in the Shadow Mach 2, your legs should not rub against any portion of the frame work or have too much free movement that might change the center of balance in a turn.

2. Seating

The Shadow Mach 2 seat width should be the same as your present wheelchair width. The backs of your knees should be clear of the front of the seat as well. Your seat depth can be adjusted from 12"-16" in one inch increments.

3. Head Assembly Height

The minimum clearance between your knees and the crank arms is 1". If the distance is less than 1", it must be raised before your first ride.

4. Arm Reach

After transferring into the Shadow Mach 2, you should slide the seat forward so when your hands are in the furthest away position they still have a slight bend in the elbows, about 10°. Lower levels, T-8 or less, may want the seat back a little so they can use some body movement. All users who lack abdominal muscles should use the chest strap for better balance while riding as well as consistent stopping and more power on inclines.

WARNINGS

All users who lack abdominal muscles should always use the chest strap. It provides better balance while riding as well as consistent stopping and more power on inclines.

5. Footrest Adjustment

The position of the footplates can be adjusted fore and aft by removing the bolts and adjusting the clamps. The height of the footrest can also be changed by removing the two bolts that attach the footrest extension tubes to the main frame. When making these adjustments be careful to leave clearance for turning the front wheel.

WARNINGS

The lowest point of the footrest should be at least 2 1/2" between the ground and underside of the footrest.

C. PRE-RIDE CHECKLIST

For proper function as well as safety, the Shadow Mach 2 must be adjusted for your body. Here are some guidelines for proper fit.

1. Wheels

Tires should be inflated to pressure listed on side walls. Low pressure may result in a pinch flat or loss of control while riding. Rims should run straight and true, with spokes having even tensions with no loose spokes. Quick-release rear axles should be fully inserted with the quick-release pin in locked position. Front axle nut should be tight with wheel centered in fork.

2. Headset

Push/pull on the front wheel. There should be no “play” felt. Push the front wheel side to side, it should move freely and stop near center.

3. Seat & Slide Rails

Inspect seat and slide rail mounting bolts. A total of eight nylock nuts hold the seat to the slide rails and the slide rails to the frame. Rocking the seat should not produce any play at these connections.

4. Shifting

Do not shift while pedaling. Make sure you can easily shift through all gears. If you cannot shift into all of the gears, then the cables may need to be adjusted.

5. Brakes

To activate the brake rotate handles in reverse direction. Remember to stop pedaling when your hands are close to your chest - begin braking from this point.

Important Note: Check for any slack in the brake cable. The brake cable should not have any slack.

RULES OF THE ROAD

Know the rules of the road before you go out riding. Laws can vary from state to state so contact your local highway department for more information. Many local bicycle clubs offer bicycle safety courses.

A. ALWAYS WEAR A HELMET

Whether going down the street or out all day, a helmet is essential to your safety. We recommend those that meet SNELL or ANSI testing standard.

B. RIDING TECHNIQUE

Start out riding slowly on a level surface. As you turn, lean into the turn. That is, lean in the same direction that you are turning. Remember, it will take some time to feel comfortable on the Shadow Mach 2. During this time, ride on streets with little traffic, on sidewalks (watch out for steeply-slanted drive-ways), or in parks. If you feel uncomfortable, or lose confidence, stop and start again after a rest.

Carry water when you are on a longer ride and take frequent water breaks. Your body is losing fluids while you exercise. It is essential that you replace them as you go along. A good rule of thumb is to drink before you are thirsty. Ride often, starting with shorter trips and, as your endurance builds, ride for longer periods of time. Don't get discouraged. Learning plateaus or times of no progress are common when learning a complicated new skill. Keep riding and you will soon be covering miles at a time. Sometimes, keeping a log of your time and distance helps get through a “slump”.

C. SHIFTING

The multiple gearing allows you to maintain a good pedaling cadence of up to 70 to 80 revolutions per minute. This will put less strain on your muscles and improve your efficiency as well. Anticipate your shifts when coming to hills and stops, trying to shift while under extreme pedal pressure is difficult at best and can cause premature wear.

D. BRAKING

Pedaling in a reverse direction will apply the stock hub brake. Only a light to medium pressure is necessary. Find the handle position that gives you the best balance while applying the brake. The chest strap will help your balance when applying the brake. A good position to begin braking is when your hands are closest to your chest.



VI. WARNINGS FOR SAFE USE

I. Second Locking Brake

The brake lever comes equipped with a button that locks the brake.

Note: Do not try to use button while in motion.

- a. Once stopped depress the brake lever, until you can press the button, while holding button release brake lever.
- b. To release brake, push and release brake lever.

E. CORNERS

Three-wheeled vehicles are inherently unstable in turns. Turns must be approached with extreme care. Driveways and even the smallest dropoffs must be approached straight on. In short, follow the same rules you do for your wheelchair, but be even more diligent because of the higher speeds.

F. CHEST STRAP

A chest strap is recommended for quads and paras, T-8 and above, for safety as well as performance. Also the chest strap helps maintain balance when applying the brakes. The chest strap is available in 4" or 2" widths.

G. HANDLES

C6 and C7 quads with some hand use and flexion should use the "Quad Easy Power" handles.

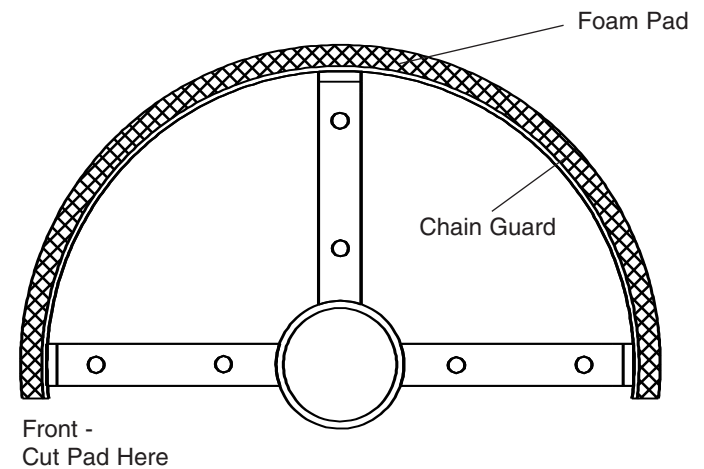
VII. SET UP & ADJUSTMENT

A. CHAIN RING PAD

The Shadow Mach 2 is packaged and shipped with the chair guard pad separate to avoid shipping damage.

I. Installation

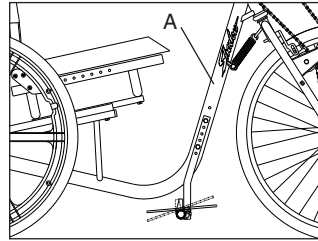
- a. Clean and dry the mounting surface of the chain guard carefully.
- b. Expose the pad adhesive by removing the backing, peeling it from one end.
- c. Position the pad so it is centered between the edges of the guard and extends from rear to front.
- d. Apply moderate pressure along the entire length using your thumb and fingers to ensure complete contact of the adhesive with the guard.
- e. Using scissors, cut any excess pad material from the ends.



B. ADJUSTABLE SEAT POSITIONING

1. Adjustment

- a. While seated in the Shadow Mach 2, with your right hand hold onto the main frame tube (A).
- b. With your left hand pull the seat adjustment lever (B) outward.
- c. Adjust the seat forward or rearward.

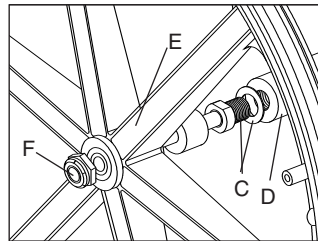
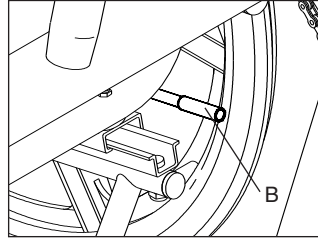


Note: Slide the seat forward so when your arms are fully extended they still have a slight bend in the elbows, about 10 degrees. Lower levels, T-8 or less, may want the seat back a little so they can use some body movement.

C. REAR WHEELS INSTALLATION

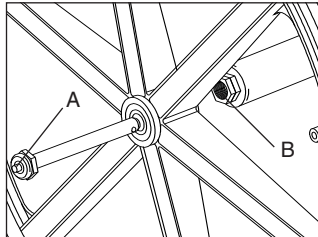
1. Threaded

- a. Remove threaded axles, axle nuts and washers from plastic bag.
- b. Insert threaded axle (C) and washer into frame (D) and tighten.
- c. Slide rear axle wheel (E) onto threaded axle.
- d. Insert the axle nut (F) and tighten until all play is removed.
- e. Repeat on opposite side.



2. Quick-Release (Optional)

- a. Depress the quick-release button (A) on the axle.
- b. Slide it into the axle sleeve (B) until it locks.



⚠ WARNINGS

An unlocked axle may come off during use, resulting in a fall and severe injury to you.

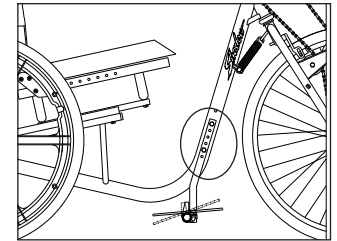
Never use the hand-cycle unless you are sure the quick-release axles are locked.

When locked, the outside quick-release buttons will pop out to their fully extended position.

D. FOOTREST

1. Height-Adjustment

- a. Remove bolts attaching the footrest to the main frame tube.
- b. Reposition footrest extension tube up or down on main frame tube using pre-drilled holes.
- c. Replace bolts and retighten.

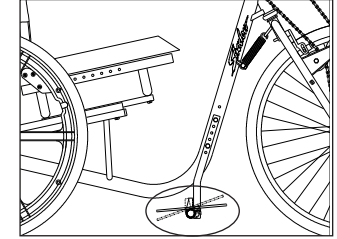


⚠ WARNINGS

The lowest point of the footrest should be at least 2 1/2" between the ground and underside of the footrest.

2. Angle-Adjustment

- a. Loosen flat socket head cap screws located on top of footplate.
- b. Rotate footplate to desired angle.
- c. Retighten bolts.
- d. Repeat on other side.



Note: Be careful to leave enough clearance to turn the front wheel.

E. TOW BAR (Optional)

The Shadow Mach 2 wheelchair tow bar has been designed to work with most wheelchairs. Your front casters will be held off the ground by two clips (A) supporting the caster axles. Minimum clearance for the tow bar to work between caster fork and wheel is 1/8".

Important Note: Caster forks that extend too far below wheel axle may interfere with the tow bar clip. Read through all instructions before mounting the tow bar to the Shadow Mach 2. It will be necessary to make a few minor adjustments to the tow bar to fit your wheelchair.

1. Parts Included For Tow Bar

- 1 - 3/8x1" hex bolt
- 1 - 3/8 stainless steel washer
- 1 - cross tube assembly
- 1 - drop tube assembly

2. Tools Required

- Socket wrench with 3" or longer extension
- 9/16" socket
- Crescent wrench
- 7/16" wrench

⚠ WARNINGS

Never tow a wheelchair if it is occupied or transporting a load.

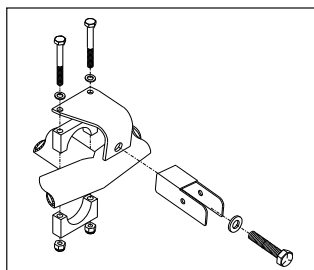
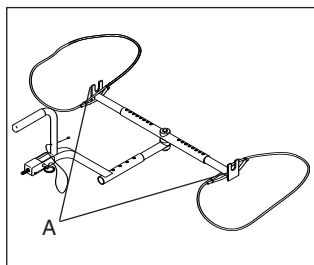
3. Installation - Receiver Unit

- a. Slide the 3/8" washer onto the 3/8" bolt and insert into the receiver so that it extends out of the receiver's hole.
- b. Using a 9/16" socket, thread the bolt into the nut on the end of the Shadow Mach 2 main tube.
- c. Place the crescent wrench on the sides of receiver (nearest Shadow Mach 2 frame) while tightening the 3/8" bolt securely to keep receiver from rotating.
- d. Install the receiver unit so that the open side is up and the sides are as near vertical as possible.

4. Adjusting Tow Bar to Your Wheelchair

- a. Transfer out of your chair for this adjustment
- b. With your casters in the rearward position adjust the width of the tow bar clips to support the inner axle of the caster wheels.

Note: Make sure to keep the left and right clip the same distance from center.

**5. Adjusting the Bungee Cords**

The bungee will need a knot tied along its length to supply correct tension to the forks.

- a. Place both wheel axles in tow bar clips (A).
- b. Pull the bungee upward to inspect. The bottom of the knot should be 2 1/2" to 3" from the bungee's resting location over the caster housing.
- c. Tie the knot loosely at first and check for the 2 1/2". Check that enough tension is applied downward to hold the wheel in the clip.
- d. When correctly adjusted, pull the knot tight.
- e. Repeat on the other side's bungee.

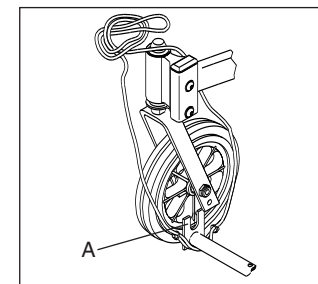
Important Note: The loop above the knot it used for installing and removing the bungee.

CAUTION: Failure to put enough tension on the bungee cords may result in damage to your wheelchair.

- f. Remove tow bar from chair.
- g. Slide cross tube assembly into drop tube assembly until the detente pin clicks into first hole.
- h. Check pivot tension - this has been adjusted to rotate but hold its position. Check this periodically. It helps the wheelchair follow in a straight line.

Note: Over-tightening this bolt will crush tube or break plastic tube cradles.

- i. Install completed tow bar assembly into the receiver and install the retaining pin (attached to handle) through the hole.



VII. SET UP & ADJUSTMENT

6. Using the Tow Bar

- a. After you have transferred into the Shadow Mach 2, attach the clips to the front forks of the wheelchair.
- b. Hook the bungee cords over the caster housings.
- c. Using the handle, lead the chair around to the rear of the Shadow Mach 2 and line up the drop tube with the receiver.
- d. Insert the drop tube all the way into the receiver and insert the retainer pin attached with the cable through the hole in the side of the receiver and the drop tube until it protrudes out the other side.
- e. You are now ready to go riding.

Important Notes: After a few test rides you may want to move the chair closer to the back of the Shadow Mach 2. You can adjust the length at the bottom of the drop tube. Be sure you don't get your chair so close that it rubs the rear wheels of the Shadow Mach 2. Your tow bar will work well on most surfaces including going over speed bumps and small obstacles (hence the reason it moves up and down). It is not designed to use on rough roads to carry loads.

VIII. TROUBLESHOOTING

You will need to adjust your hand-cycle from time to time for best performance (especially if you alter the original settings). This chart gives you a first solution, then a second and a third if needed. You may need to look farther to find the best solution for a specific problem.

Note: To keep track of your progress, make only ONE change at a time.

| SYMPTOMS | | | | | | SOLUTIONS |
|--------------------|---------------------|--------------------|------------------|---------------------|----------------|--|
| Left Turn In Chair | Right Turn In Chair | Looseness In Chair | Sluggish Turning | Squeaks And Rattles | Caster Flutter | |
| ✓ | ✓ | ✓ | ✓ | | | Make sure tire pressure is correct and equal in both rear tires and front caster tires, if pneumatic. |
| | | ✓ | ✓ | ✓ | ✓ | Make sure all nuts and bolts are snug. |
| | | ✓ | | ✓ | | Make sure all spokes and nipples are tight on radial spoke wheels. |
| | | | ✓ | | | Use Tri-Flow Lubricant (Teflon®-based) between all modular frame connections and parts. |
| ✓ | ✓ | | ✓ | | ✓ | Check for proper caster plate adjustment. See instructions for caster plate adjustment. |
| | ✓ | | | | | Add a spacer washer between the plastic saddle and the caster plate on the top of the left caster plate. |
| ✓ | | | | | | Add a spacer washer between the plastic saddle and the caster plate on the top of the right caster plate. |
| ✓ | | | | | | Add a spacer washer between the plastic saddle and the caster plate on the bottom right caster plate retaining bolts. |
| | ✓ | | | | | Add a spacer washer between the plastic saddle and the caster plate on the bottom right caster plate retaining bolts. |
| ✓ | ✓ | | ✓ | | | Make sure there is an equal number of camber washers on each axle plate. |
| ✓ | ✓ | | | | ✓ | Make sure both front casters touch the ground simultaneously. If they do not, add the proper spacers between the bottom bearing of the caster plate and fork stem nut until they do. Make sure you check for this problem on a flat surface. |

A. INTRODUCTION

1. Proper maintenance will improve performance and extend the useful life of your hand-cycle.
2. Clean your hand-cycle. regularly. This will help you find loose or worn parts and make your hand-cycle. easier to use.
3. Repair or replace loose, worn, bent or damaged parts **before using this hand-cycle.**
4. To protect your investment, have all major maintenance and repair work done by your authorized Quickie supplier.

⚠ WARNINGS!

If you fail to heed these warnings your hand-cycle may fail and cause severe injury to the rider or others.

1. **Inspect and maintain this hand-cycle strictly per chart.**
2. **If you detect a problem, make sure to service or repair the hand-cycle before use.**
3. **At least once a year, have a complete inspection, safety check and service of your hand-cycle made by an authorized Quickie supplier.**

B. MAINTENANCE CHART

| CHECK... | Weekly | 3 Months | 6 Months | Annually |
|---------------------------------------|--------|----------|----------|----------|
| Tire inflation level | ✓ | | | |
| Wheel locks | ✓ | | | |
| All fasteners for wear and tightness | | | ✓ | |
| Armrests | | | | ✓ |
| Axle and axle sleeves | | | | ✓ |
| Wheels, tires and spokes | | | ✓ | |
| Casters | | | ✓ | |
| Anti-tip tubes | | | ✓ | |
| Frame | | | | ✓ |
| Upholstery | | | ✓ | |
| Service by Authorized Supplier | | | | ✓ |

C. MAINTENANCE TIPS**1. Axles and Axle Sleeves**

Check axles and axle sleeves every six months to make sure they are tight. Loose sleeves will damage the axle plate and will affect performance.

2. Tire Air Pressure

Check air pressure in pneumatic tires at least ONCE A WEEK. The wheel locks will not grip properly if you fail to maintain the air pressure shown on tire sidewall.

D. CLEANING**1. Paint Finish**

- a. Clean the paint finish with mild soap at least once a month.
- b. Protect the paint with a coat of non-abrasive auto wax every three months.

2. Axles and Moving Parts

- a. Clean around axles and moving parts WEEKLY with a slightly damp (not wet) cloth.
- b. Wipe off or blow away any fluff, dust, or dirt on axles or moving parts.

Note: You do not need to grease or oil the hand-cycle.

3. Upholstery

- a. Hand-wash (machine washing may damage fabric).
- b. Drip-dry only. DO NOT machine dry as heat will damage fabric.

E. STORAGE TIPS

1. Store your hand-cycle in a clean, dry area. If you fail to do so, parts may rust or corrode.
2. Before using your hand-cycle, make sure it is in proper working order. Inspect and service all items on the "Maintenance Chart." (**See p. 18**)
3. If stored for more than three months, have your hand-cycle inspected by an authorized Quickie supplier before use.

X. QUICKIE LIMITED WARRANTY

A. FOR TWO (2) YEARS

Quickie warrants the frame and quick-release axles of this hand-cycle against defects in materials and workmanship for two (2) years from the date of first consumer purchase.

B. FOR ONE (1) YEAR

We warrant all Quickie-made parts and components of this hand-cycle against defects in materials and workmanship for one year from the date of first consumer purchase.

C. LIMITATIONS

1. We do not warrant:
 - a. Tires and tubes, upholstery, armrests and push-handle grips.
 - b. Damage from neglect, misuse, or from improper installation or repair.
 - c. Damage from exceeding weight limit of 150 pounds.
2. This warranty is VOID if the original hand-cycle serial number tag is removed or altered.
3. This warranty applies in the USA only. Check with your Quickie supplier to find out if international warranties apply.

D. WHAT WE WILL DO

1. Our sole liability is to repair or replace covered parts. This is the exclusive remedy for consequential damages.

E. WHAT YOU MUST DO

1. Obtain from us, while this warranty is in effect, prior approval for return or repair of covered parts.
2. Return the hand-cycle or part(s), freight pre-paid, to Quickie at:
2842 Business Park Avenue, Fresno, CA 93727-1328.
3. Pay the cost of labor to repair, remove or install parts.

F. NOTICE TO CONSUMER

1. If allowed by law, this warranty is in place of any other warranty (written or oral, express or implied, including a warranty of merchantability, or fitness for a particular purpose).
2. This warranty gives you certain legal rights. You may also have other rights that vary from state to state.

Record your serial number here for future reference:



www.sunrisemedical.com

Sunrise Medical, Inc.

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(303) 218-4500 or (800) 456-8165

in Canada (800) 263-3390