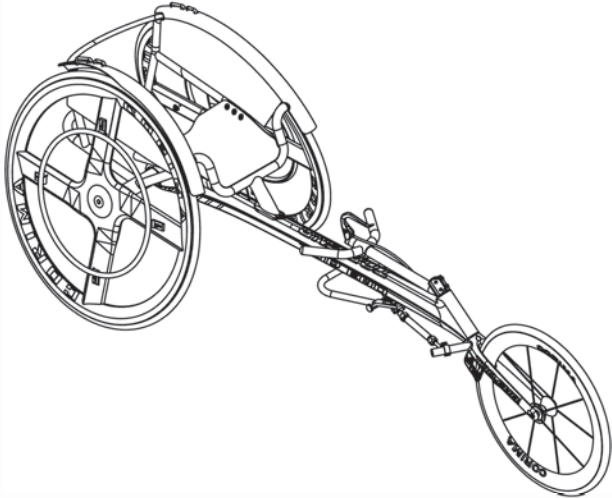


Top End®

Eliminator™ NRG Racing Chair

User Manual



This manual **MUST** be given to the user of the product.
BEFORE using this product, read this manual and save for future reference.

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1 General

1.1 Symbols

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage.

See the information below for definitions of the signal words.

**DANGER!**

– Danger indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.

**WARNING!**

– Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION!**

– Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage or minor injury or both

**IMPORTANT**

– Important indicates a hazardous situation that could result in damage to property if it is not avoided.



Gives useful tips, recommendations and information for efficient, trouble-free use.

1.2 Intended Use

Top End Racing Chairs are designed and built solely for transportation of a single rider for use in recreational, road racing, time trial and off road enjoyment. They are intended to be used for longer, faster rides in recreational areas including paved, crushed gravel, riding paths or off-road courses. They are not intended to be used as a daily wheelchair or the treatment of any medical condition but only for recreational purposes. Any other use is prohibited.

Max. user weight: 220lbs (100 kg).

1.3 Indications For Use

The device is intended to provide mobility to persons playing sports activities only on courts or designated playing surfaces. The device is not intended for a daily use wheelchair or treatment of any medical condition but for recreational purposes only. Any other use is prohibited.

1.4 Service Life

The expected service life is five years, presuming that the product is used daily and in accordance with safety instructions, maintenance instructions and intended use, stated in this manual.

1.5 Wear and Tear Information

Normal wear and tear items and components include but are not limited to all upholstery items including seat and back upholstery, cushions, wheels, tires and strapping.

Top End reserves the right to ask for any item back that has an alleged defect in workmanship. See Warranty policy shipped with the product for specific warranty information.

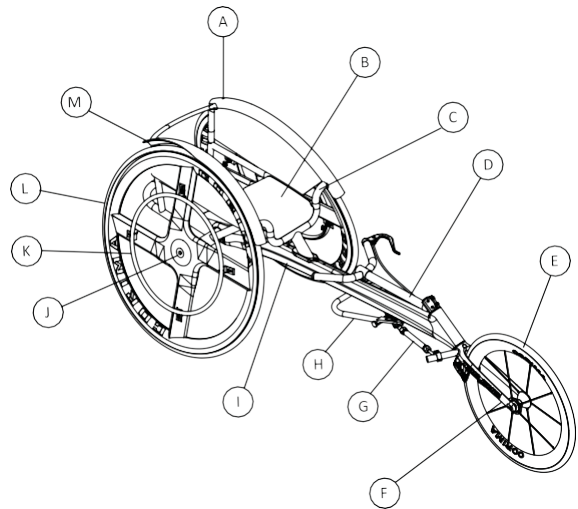
Refer to the Maintenance chapter in this user manual for the proper preventative maintenance schedule and use of the product.

This is only a general guideline and does not include items damaged due to abuse and misuse.

PRODUCT TYPE	PRODUCT WEAR AND TEAR PART
WHEELCHAIRS:	Wheels
UPHOLSTERY AND SEATING:	Seat Cushion Foam • Seat Cushion Covers • Back Cushion Foam • Back Cushion Covers

2 Overview

2.1 Label Locations and Component Identification



ITEM	DESCRIPTION
A	Webrings for Back Upholstery
B	Knee Pan
C	Cage
D	Main Steering Tube
E	Front Wheel
F	Front Fork
G	Compensator Cylinder
H	Track Control Steering Mechanism
I	Weight Capacity Label <div><div>WEIGHT CAPACITY 220 LBS (100 kgs) REFER TO USER MANUAL 1196483-B</div></div>
J	Threaded Axle
K	Pushrim
L	Rear Wheel
M	Fender and Side Panel

2.2 Typical Product Parameters

Upper Inside Frame Width:	Custom
Seat Style:	Kneel Position
Cage Style:	U Cage
Lower Inside Seat Width (Seat Cage):	Inside Seat measurement to allow for hip space - snug is preferred
Axle Position (from front of the backrest upright):	5 to 8 inches
Seat Height (height from floor)	Rear: 15 - 20 inches; Front: 16 - 20 inches
Overall Length (Front Wheel to Rear Wheel):	70 or 74 inches
Camber:	11, 12 and 13 degrees
Rear Wheel Size (diameter):	700C spoked performance
Rear Axle (diameter):	1/2 - inch threaded
Pushrims (diameter):	Rubber coated - 13 to 16 inches
Front Wheel Size (diameter):	20 inches (carbon fiber optional)
Brake:	Rim Brake, hand Operated Brake Lever
Weight:	17 lbs

Shipping Weight:	27lbs
Standard Equipment:	Brake, Positioning Straps (25", 30", 35"), Tool Kit, Pushrims, Front and Rear Wheels and Side Guards, Aluminum Knee Plate
Options: *see order form	Solid Seat, Cordless Speedometer, Additional Straps, Cushion, Racing Shirt, Wheel Bag, Carbon Fiber Wheel Upgrade, Safety Flag, Click Straps, Alignment Gauge

2.3 Tire Pressure Conversion



PSI rating is printed on the side of the tire.

Conversion formula: 1 psi = 6.895 kPa (approx. 7 kPa).

PSI	KILOPASCALS
50	345
55	379
60	414
65	448
70	483
75	517
80	552
85	586
90	621
95	655
100	690
105	724
110	758
115	793
130	827

3 Safety

3.1 General Guidelines

The safety section contains important information for the safe operation and use of this product.

The Top End Eliminator NRG racing chair is custom built to make the most of each athlete's potential by matching up the athlete's ability with the optimum position. The standard position is recommended for users to use the kneeling position, which is best for experienced athletes with good balance who only kneel in their chair or need an amputee seat.



WARNING!

Risk of Death, Injury or Damage

Improper use of this product may cause injury or damage.

- If you are unable to understand the warnings, cautions or instructions, contact a healthcare professional, or provider before attempting to use this equipment.
- DO NOT use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, service manuals or instruction sheets supplied with this product or optional equipment.

Continued use of the products with damaged parts could lead to the product malfunctioning, causing injury to the user and/or caregiver.

- Check all product components and carton for damage and test components before use. In case of damage or if the product is not working properly, stop using the product and contact a qualified technician or Top End for repair.

**WARNING!****Risk of Serious Injury or Damage**

Use of unapproved accessories may result in serious injury or damage.

- Top End products are specifically designed and manufactured for use in conjunction with Top End accessories. Unapproved accessories have not been tested by Top End for use with our products.
- DO NOT use unapproved accessories.
- To obtain approved Top End accessories, contact Top End by phone or at www.topendsportsllc.com.

**DANGER!****Risk of Death, Serious Injury or Damage**

Use of incorrect or improper replacement (service) parts may cause death, serious injury or damage.

- Replacement parts MUST match original Top End parts.
- ALWAYS provide the wheelchair serial number to assist in ordering the correct replacement parts.

**WARNING!****Risk of Serious Injury or Damage**

Hardware that is loosely secured could cause loss of stability resulting in serious injury or damage.

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely.

**DANGER!****Risk of Death, Serious Injury or Damage**

Lighted cigarettes dropped onto an upholstered seating system can cause a fire resulting in death, serious injury, or damage.

Wheelchair occupants are at particular risk of death or serious injury from these fires and resulting fumes because they may not have the ability to move away from the wheelchair.

- DO NOT smoke while using this wheelchair.

**WARNING!****Risk of Injury, Damage or Death**

Improper monitoring or maintenance may cause injury, damage or death due to ingestion or choking on parts or materials.

- Closely supervise children, pets, or people with physical/mental disabilities.

**WARNING!****Risk of Serious Injury**

Sharp edges can cause serious injury

- Be mindful that some parts may have sharp edges. Use caution when encountering these sharp edges.

**DANGER!****Risk of Death, Serious Injury or Damage**

Missing attaching hardware could cause instability resulting in death, serious injury or damage.

- Ensure all attaching hardware is present and tightened securely.

Repair and Service Information**DANGER!****Risk of Injury, Damage or Death**

Improper setup, service or adjustment may cause injury, damage or death.

- Qualified technician MUST setup and service the racing chair.
- DO NOT allow non-qualified individuals to perform any work or adjustments on the racing chair.
- Ensure all hardware is securely tightened after setup, service or adjustments.
- Warranty is void if non-qualified individuals perform any work on this product.

**IMPORTANT**

- THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

As a manufacturer of racing chairs, Top End endeavors to supply a racing chair to meet many needs of the end user. However, final selection of a racing chair to be used by an individual rests solely with the user and his/her health care professional capable of making such a selection. Use

this information only as a basic guide. The techniques that are discussed on the following pages have been used successfully by many. Individual users often develop skills to deal with daily living activities that may differ from those described in this manual. Top End recognizes and encourages everyone to try what works best for him/her in overcoming obstacles that they may encounter.

Techniques in this manual are a starting point for the racing chair user and assistant with safety as the most important consideration for all.

3.2 Safety and Handling

Safety and Handling of the racing chair requires close attention of the user as well as the assistant. This user manual points out the most common procedures and techniques involved in the safe operation and maintenance of the racing chair. It is important to practice and master these safe techniques until you are comfortable in maneuvering the racing chair.

Care, consideration and practice MUST be taken and observed in the following safety points.

**WARNING!****Risk of Injury or Damage**

- The user is responsible for normal upkeep and maintenance of the racing chair to keep it in proper operating condition.
- The manufacturer is not responsible for failure, damage or injury caused by improper operation or maintenance by the end-user.
- A helmet **MUST ALWAYS** be worn when operating the racing chair.
- Operation of the racing chair is subject to all traffic rules and regulations. (This may include the use of a safety lights and reflectors for dusk/night riding.) Give pedestrians the right of way.
- Use proper hand signals when turning.
- Slow down when turning or cornering, at all street intersections and observe in both directions at least twice before proceeding.
- **DO NOT** attempt to move up or down an incline with an ice or oil film. Avoid all surface hazards.
- **DO NOT** attempt to ride over curbs or obstacles or speed bumps. Doing so may cause your racing chair to "bottom out" and/or turn over and cause bodily harm or damage to the racing chair.

**WARNING!****Risk of Injury or Damage**

- **DO NOT** attempt to lift the racing chair by any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a racing chair may result in injury to the user or damage to the racing chair.
- **DO NOT** stand on the seat or frame of the racing chair.

**WARNING!****Risk of Injury or Damage**

- **DO NOT** carry any items that may obstruct your view or prohibit you from operating the racing chair properly.
- Top End strongly recommends that the racing chair be boxed or otherwise protected before transporting by an airline carrier.

**WARNING!****Risk of Injury or Damage or Death**

- Improper use of the racing chair may cause instability and may result in injury, damage or death. The stability of the wheelchair is adversely affected by additional weight that shifts the center of gravity.
- This racing chair has been designed to accommodate one individual. **DO NOT** operate with additional persons.
 - **DO NOT** carry heavy objects on your lap while operating the wheelchair.



WARNING!

Risk of Injury, Damage or Death

Use of the racing chair while judgement or ability is impaired may result in injury, damage or death.

- DO NOT operate the racing chair under the influence of alcohol, medications or other substances that impair judgement or function.
- Changing medications may affect your ability to operate the racing chair. Discuss the impact on your ability to operate the wheelchair with a health care professional when changing medications.
- DO NOT operate the racing chair under conditions where judgement or function may be impaired. This may include but is not limited to lack of sleep or poor sight.
- Always be aware of your surroundings.



WARNING!

Risk of Injury or Damage

To avoid injury or damage from moving parts:

- ALWAYS keep hands and fingers clear of moving parts.



WARNING!

Risk of Injury or Damage

Improper operation may change the normal balance, center of gravity or weight distribution of the racing chair causing injury or damage.

- Determine and establish your personal safety limits. Practice bending, reaching and transferring activities in several combinations in the presence of a qualified healthcare professional before attempting active use of the racing chair.
- ALWAYS shift your weight in the direction you are turning. Shifting your weight in the opposite direction of the turn may cause the inside drive wheel to lose traction.



WARNING!

Risk of Serious Injury

Impacting objects in the surrounding environment can cause serious injury.

- When maneuvering the racing chair ALWAYS have assured cleared distance with all objects in environment.

**WARNING!****Risk of Injury, Damage or Death**

Damaged parts due to collision or impact may result in injury, damage or death.

- Seek immediate attention and service if wheelchair is involved in a collision or impact event. This includes, but is not limited to, vehicle accidents, mishandling and impact events where the wheelchair strikes something or is struck by something that may cause damage.
- Ensure your wheelchair is working properly and is inspected by a qualified Top End technician if the wheelchair is involved in a collision or impact event.

3.3 Operating Information

**WARNING!****Risk of Injury or Damage**

Top End DOES NOT recommend the use of its racing chair as a weight training apparatus. Top End racing chairs have NOT been designed or tested as a seat for any kind of weight training. Using said racing chair for weight training could result in serious bodily injury to the user, damage to the racing chair and surrounding property. Also, if occupant uses said racing chair as a weight training apparatus, Top End shall NOT be liable for bodily injury and the warranty is void.

- DO NOT use the racing chair as a weight training apparatus.

As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a racing chair, in a moving vehicle of any type. It is Top End's position that users of racing should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Top End cannot and does not recommend any racing transportation system.

**WARNING!****Risk of Injury or Damage**

- Care, consideration and practice MUST be taken and observed in the following safety points.
- Safe use requires the close attention of the user as well as the assistant. This user manual points out the most common procedures and techniques involved in the safe operation and maintenance of the racing chair. It is important to practice and master these safe techniques until you are comfortable in maneuvering the racing chair.
- Shoes MUST ALWAYS be worn when operating the racing chair.



WARNING!

Risk of Injury or Damage Stability and Balance

- For stability and proper operation of your racing chair you **MUST** always maintain proper balance. Turning and cornering affects the stability and balance of the racing chair and user. Your racing chair should remain upright and stable during turns and cornering when operated correctly.
- Top End recommends using seat positioning strap for additional safety.

A Note Assistants

- When learning assistance techniques for the racing chair, have an experienced assistant help you before attempting it alone.
- When you are assisting with a transfer to/from the racing chair, remember to use good body mechanics. Keep your back straight and bend your knees when lifting or positioning the racing chair for the end-user.
- Also, be aware of detachable parts. These must **NEVER** be used for lifting supports or to move the racing chair, as they may be inadvertently released, resulting in possible injury to the user and/or assistant.



DANGER!

Risk of Death or Serious Injury

Not wearing your seat positioning strap could result in death or serious injury.

- **ALWAYS** wear your seat positioning strap. Your seat positioning strap helps reduce the possibility of a fall from the wheelchair. The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, seat positioning strap **MUST** be replaced **IMMEDIATELY**.



WARNING!

Percentage of Weight Distribution

- Transferring in and out of the racing chair, turning and cornering will cause a change to the normal balance, the center of gravity, and the weight distribution of the racing chair. To determine and establish your personal safety limits, practice transferring activities in several combinations in the presence of a qualified health care professional before attempting a transfer alone.
- Proper positioning is essential for your safety.

3.4 Weight Capacity



WARNING!

Risk of Death or Serious Injury

Exceeding the weight capacity of the racing chair could cause instability resulting in death or serious injury.

- DO NOT exceed the weight capacity.

The Top End Eliminator NRG has a weight capacity of 220lbs (100 kg).

3.5 Tire Pressure



DANGER!

Risk of Injury, Damage or Death

Overinflation of tires may cause tires to explode.

- Inflate tire to the proper tire pressure (P.S.I./kilopascals) listed on the side wall of the tire.
- Only use wheelchair with tires at proper tire pressure.
- The wheels and tires should be checked periodically for cracks and wear and should be replaced if necessary.



WARNING!

Risk of Injury or Damage

Riding on flat or underinflated tires can cause injury, as well as damage to the tire, tube and racing chair wheels.

- DO NOT ride on a flat or under inflated tires.
- CARBON FIBER WHEELS ONLY - Carbon Fiber Wheels MUST NOT be used when tires are bare or flat. If a flat wheel occurs, STOP USING IMMEDIATELY.

3.6 Weight Training



WARNING!

Risk of Injury or Damage

Top End DOES NOT recommend the use of its racing chair as a weight training apparatus. Top End racing chairs have NOT been designed or tested as a seat for any kind of weight training. Using said racing chair for weight training could result in serious bodily injury to the user, damage to the racing chair and surrounding property. Also, if occupant uses said racing chair as a weight training apparatus, Top End shall NOT be liable for bodily injury and the warranty is void.

- DO NOT use the racing chair as a weight training apparatus.

3.7 Transferring Into/Out of the Racing Chair



WARNING!

Risk of Injury or Damage

- Before attempting to transfer in or out of the racing chair, every precaution should be taken to reduce the gap distance. Position the racing chair on level ground and as close as possible to the object you are transferring into or out of.
- The tautness of the back upholstery, knee and/or foot position, as well as the user condition directly relate to the stability of the racing chair. Any change to one or any combination of the three may cause the racing chair to decrease in stability.
- The object you are transferring into or out of **MUST** also be secured before attempting any transfer.



- Top End strongly recommends an experienced assistant help in the transferring to and from the racing chair. The assistant should hold down the front of the racing chair to avoid any instability that may occur.
- Some racers will rest on the frame cage of the racing chair halfway through the transfer and move the **RIGHT** hand to the right side of the frame.

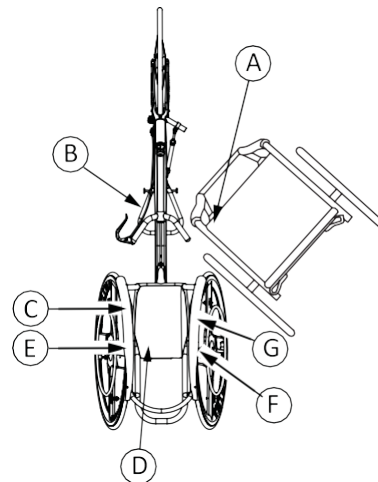


Fig. 3-1

1. Perform the following:
 - a. Position the chair as close as possible alongside the seat to which you are transferring.
 - b. Shift body weight to the edge of the wheelchair upholstery closest to the racing chair.
 - c. Place **LEFT** leg on top of the **LEFT** cage frame.
 - d. Start **RIGHT** leg into the kneeling upholstery and **UNDER** the seat sling.
 - e. Start **LEFT** leg into the kneeling upholstery and **UNDER** the seat sling.
 - f. Place **LEFT** hand on the frame cage.
 - g. Place **RIGHT** hand on the racing chair frame.
 - h. Lift and shift weight into racing chair upholstery.
 - i. Tighten straps at the top of the fender.

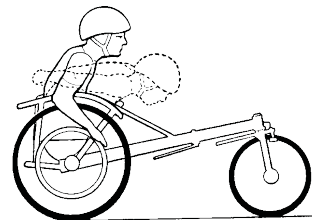
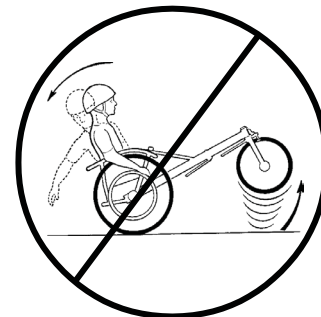
3.8 Reaching and Bending Forward, Backward or Sideways

**WARNING!****Risk of Injury or Damage**

Sitting erect or leaning over the top of the back upholstery will change your center of gravity and may result in tipping over backwards.

– DO NOT sit erect or lean over the top of the back upholstery.

Position the racing chair as close as possible to the desired object. Reach back only as far as your arm will extend without changing your sitting position.

DO THIS*Fig. 3-2***DO NOT DO THIS***Fig. 3-3*

4 Safety Inspection Troubleshooting

4.1 Safety Inspection Checklist



Every six months or as necessary, take your Top End racing chair to a qualified technician for a thorough inspection and servicing. Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your racing chair. For safe and proper operation, your racing chair **MUST** be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your racing chair.

Initial adjustments should be made to suit your personal body structure and preference. Thereafter, follow these maintenance procedures:

Inspect/Adjust Initially and Weekly

- ☐ Make sure that the racing chair rolls straight (no excessive drag or pull to one side).
- ☐ Inspect seat and back upholstery for rips or sagging.
- ☐ Inspect that rear wheel axles are securely tightened.
- ☐ Inspect that there is no excessive side movement or binding when rear wheel is lifted and spun.
- ☐ Inspect pushrims for signs of peeling of coating where it might separate from the pushrim.
- ☐ Inspect spokes for bent or broken spokes.
- ☐ Inspect that all spokes are uniformly tight.
- ☐ Inspect front wheel/fork assembly for proper tension by front wheel; front wheel should come to a gradual stop. Loosen/tighten hex crews if wheel wobbles noticeably or binds to a stop. There will be some play in the front wheel.

- ☐ Inspect that the wheel bearings are clean and free of moisture.
- ☐ Inspect that the brake does not interfere with front wheel when rolling.
- ☐ Inspect that the brake is easy to engage.
- ☐ Inspect that there is no excessive wear of brake pads.



CAUTION!

– As with any vehicle, the wheels and tires should be checked periodically for cracks, flat spots and wear, and should be replaced.

- ☐ Inspect tires for flat spots and wear.
- ☐ Check pneumatic tires for proper inflation.
- ☐ Check frame cage for interference with tires.
- ☐ Clean upholstery with light detergent and water.
- ☐ Inspect for bent or broken frame.
- ☐ If installed, inspect the fixed footrest mounting hardware to ensure it is tight and the footrest secure.
- ☐ Inspect footrest straps for wetness and/or damage.
- ☐ Inspect seat positioning straps for any signs of wear. Replace if necessary.

Inspect/Adjust Monthly

- ☐ Inspect that rear wheel axles are securely tightened.
- ☐ Inspect front wheel/fork assembly for proper tension by front wheel; front wheel should come to a gradual stop. Loosen/tighten hex screws if wheel wobbles noticeably or binds to a stop. There will be some play in the front wheel.
- ☐ Inspect that the wheel bearings are clean and free of moisture.

- ☐ Inspect that the brake does not interfere with front wheel when rolling.
- ☐ Inspect that there is no excessive wear of brake pads.

Inspect/Adjust Periodically

- ☐ Make sure that the racing chair rolls straight (no excessive drag or pull to one side).
- ☐ Inspect upholstery for rips or sagging.
- ☐ Inspect that rear wheel axles are securely tightened.
- ☐ Inspect that there is no excessive side movement or binding when rear wheel is lifted and spun.
- ☐ Inspect pushrims for signs of rough edges or peeling of tire/tape coating where it might separate from the pushrim.
- ☐ Inspect that the wheel bearings are clean and free of moisture.
- ☐ Inspect that the brake is easy to engage.
- ☐ Clean upholstery with light detergent and water.

4.2 Troubleshooting

Veers Right	Veers Left	Sluggish Turn or Performance	Squeaks and Rattles	Looseness in Racing Chair	Solutions
X	X	X			Check tires for correct and equal pressure.
X	X				Check for loose stem nuts
			X	X	Check spokes and nipples
X	X	X	X	X	Adjust track control steering mechanism
		X		X	Check toe in/toe out

5 Initial Setup

5.1 Installing the Corima Disc (Carbon Fiber) Rear Wheel

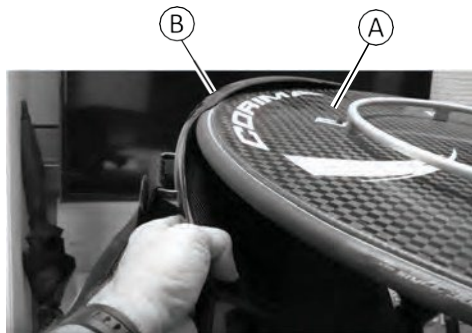


Fig. 5-1



Fig. 5-2

1. Position the tire/wheel A underneath the fender B and then position axle C into the axle receiver D.

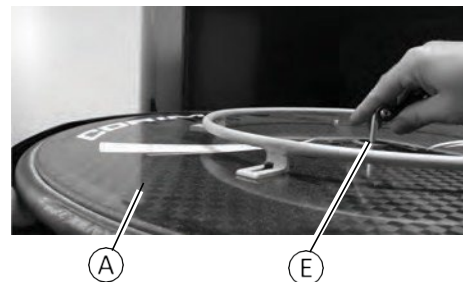


Fig. 5-3



CAUTION!

Risk of Damage

Damage to the camber bushing may result if the axle of the rear wheel is overtightened.
– Do not overtighten the wheel.

2. Using a 6 mm wrench E, tighten the axle of the rear wheel A to secure in place.

5.2 Installing the High Performance Standard Rear Wheel



Fig. 5-4

1. Position the 1/4" hex key A into the axle B.



Fig. 5-5

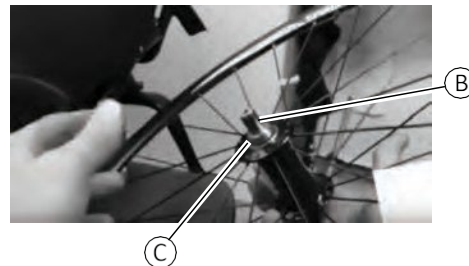


Fig. 5-6

2. Place the spacer with O ring C on the axle B.



This spacer puts the high performance rear wheel in the same mounting location as the carbon fiber wheel when it's installed.



Fig. 5-7

3. Position the wheel/tire D up underneath the fender E.

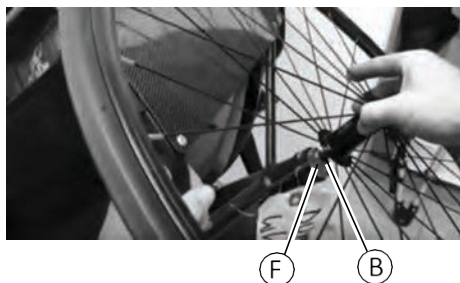


Fig. 5-8

4. Position the axle B into the camber bushing F.

**CAUTION!****Risk of Damage**

Damage to the camber bushing may result if the rear wheel axle is overtightened.

– Do not overtighten.

5. Securely tighten the axle with 1/4" hex key.

5.3 Adjusting the Control Steering Mechanism



Different speeds and conditions will affect the way the racing chair handles. Extreme crosswinds should be taken into consideration.

Adjustments to the track control steering mechanism should be made while sitting in the racing chair.

To prevent disqualification, it is critical that the track control steering mechanism be set to control the chair within the assigned lane and at the speed you intend to race.



Location: The ideal place to adjust the tracking on your racing chair is a racetrack where you can use the lines as a guide.

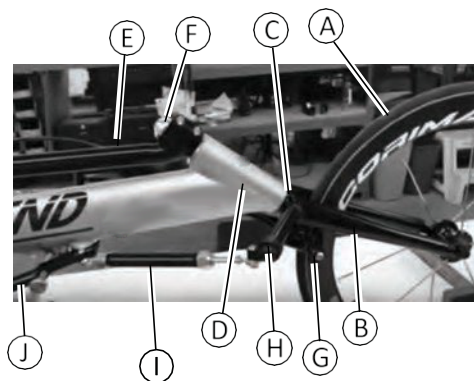


Fig. 5-9

ITEM	DESCRIPTION
A	Front Wheel
B	Fork
C	Stem
D	Head Tube
E	Main Steering Tube
F	Head Tube Cap
G	Brake Caliper
H	Compensator Arm
I	Compensator
J	Track Control (partial view)

Adjusting for Tracks - Straights

Right Side of Chair

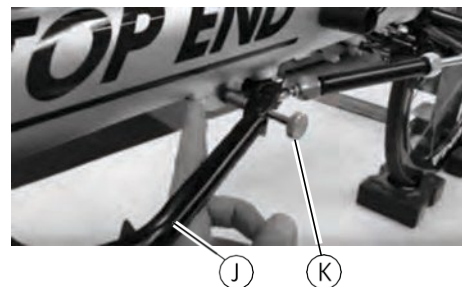


Fig. 5-10

The right thumb screw K controls how straight the chair tracks or whether it veers left or right. If you loosen the thumb screw and then re-engage the track control, the chair will steer more to the right. If you tighten the thumb screw and then re-engage the track control, the chair will steer more to the left. Ideally, you want to adjust the right thumb screw accordingly so that the chair travels in a straight line.

Adjusting for Tracks - Turns

Left Side of Chair



Fig. 5-11

The location of the left thumb screw K is preset to provide a gap L between the thumb screw and the frame. This setting is used to trace out the arc on a given lane when going around a track.

- For Inside lane of a track - loosen the thumb screw so that you can move the track control over more.
- For Outer Lane of a track - tighten the thumb screw or increase turning radius to match track lane.



When adjusting track control steering, this may take several adjustment attempts, repeat process as many times as necessary. Travel the track and adjust as necessary.

Adjusting for Road Racing

1. Adjust the right thumb screw so that the chair travels in a straight line.
2. Adjust the left thumb screw all the way in until it engages the frame.
3. Once both thumb screws are tightened, loosen each thumb screw 1/2 turn. This will allow for any un-evenness in the road, and you can adjust the control system to compensate.

6 Operation

6.1 Operating the Racing Chair

1. Transfer into the racing wheelchair.
2. Check and adjust the upholstery if necessary.
3. Check Brakes.
 - Check cable for signs of wear or fraying.
 - Squeeze the brake lever firmly and check for proper brake function.
 - Adjust for pad wear if necessary.
 - Check pads for wear and replace if necessary.
4. Place at least one hand on the pushrim(s). Rotate the pushrim forward (toward the front) to propel the racing chair forward.

Operating the Track Control

Right Side of Chair

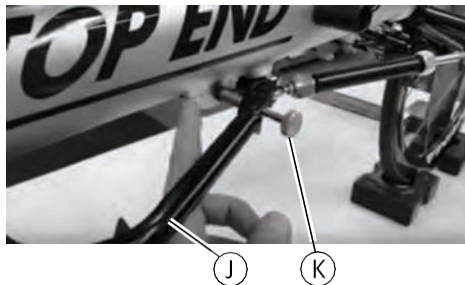


Fig. 6-1

- **Straight** - If you push the track control J on the right side of the chair toward the frame so that the thumb screw K hard stops against the frame, this will make it so that the chair travels in a straight line.

Left Side of Chair

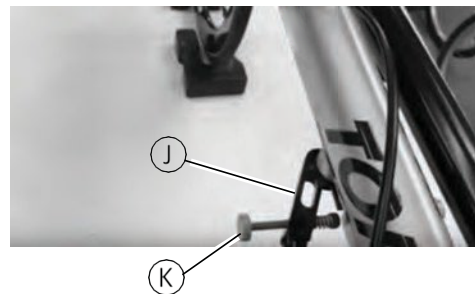


Fig. 6-2

- **Turn** - If you push the track control J on the left side of the chair toward the frame so that the thumb screw K hard stops against the frame, this will make it so that the chair travels in around curves.

7 Upholstery

7.1 Back Upholstery Components

Review the component identification chart below. Some instructional text will not identify each component. This chart will serve as identifying components for this procedure and adjusting the back upholstery procedure.

COMPONENT IDENTIFICATION	
ITEM	DESCRIPTION
A	Back Upholstery
B	Hook and Loop Strap
C	Webring
D	Fender
E	Side Panel
F	Rear Upright
G	Back Upholstery Strap
H	Hook
I	Lower Flap
J	Seat Upholstery
K	Cage
L	Loop
*L	Small piece of loop (optional) that is used for a tool kit.



There are three basic attachment points: Hook and Loop strap at the top, back upholstery strap and lower flap.

Hook and loop strap at the top of the back upholstery

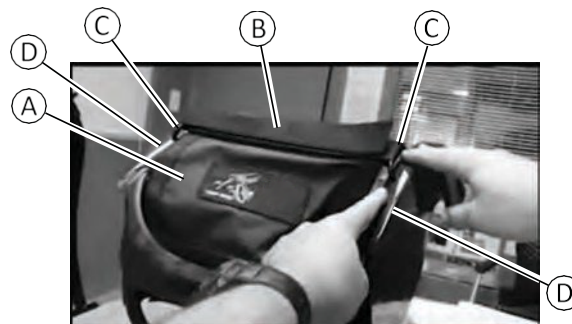


Fig. 7-1



The hook and loop strap B at top of the back upholstery A is threaded through an anchor point C located on each fender D.

The purpose of the hook and loop strap is that it pulls down on the lower back/ pelvis area to make sure that when the athlete is in the forward pushing position they are held inside the chair. The tightness/looseness is a personal preference to each individual athlete.

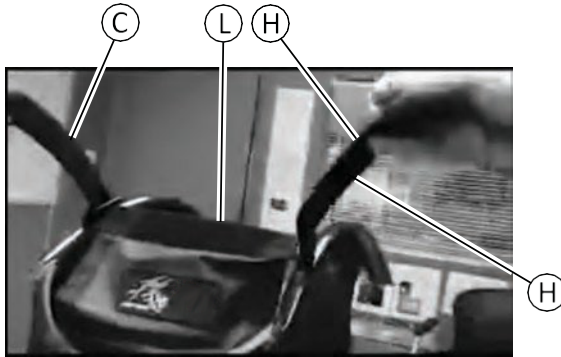


Fig. 7-2



Illustration is viewing from behind the chair.

The hook and loop strap is a tri-fold configuration where each side folds down on top of each other and attaches to itself.

- The center portion of the strap has loop L.
- The right-side portion of the strap has a hook H on the inside and outside.
- The left-side portion of the strap has loop L on the inside.

Back Upholstery Strap



Fig. 7-3

Back upholstery strap G threads in between side panel E and rear uprights F.

LEFT SIDE

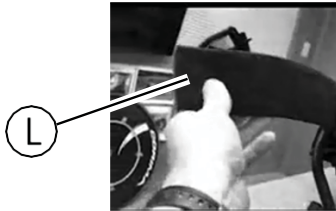


Fig. 7-4

RIGHT SIDE



Fig. 7-5

CENTER PORTION OF BACK STRAP

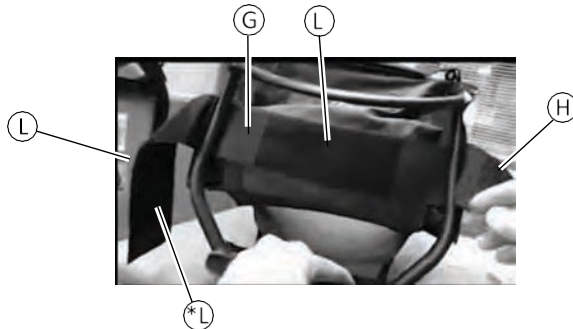


Fig. 7-6

BACK STRAP CLOSED

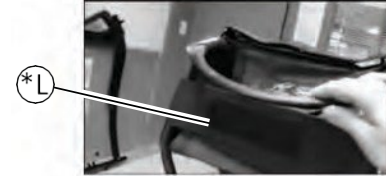


Fig. 7-7



The back upholstery strap G has hook and loop B that attaches in the same manner, a tri-fold configuration where each side folds down on top of each other and attaches to itself.

- The center portion of the strap has loop L.
- The right-side portion of the strap has a hook H on the inside and outside.
- The left-side portion of the strap has loop L on the inside.
- *Some back upholstery straps may have an additional small piece of loop *L sewn on the outside for a tool kit.

Lower Flap

Underside of Chair

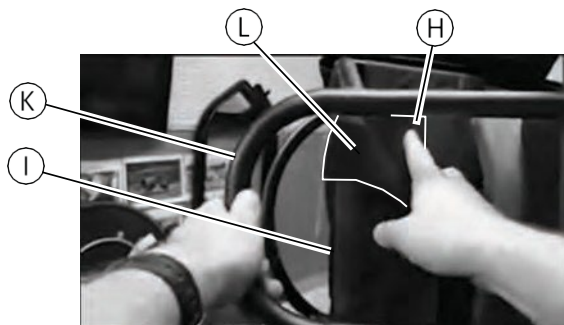


Fig. 7-8

NOTE: White edges lines were added for illustration purposes only. They do not appear on the upholstery.

Lower Flap Completely Disconnected from Seat

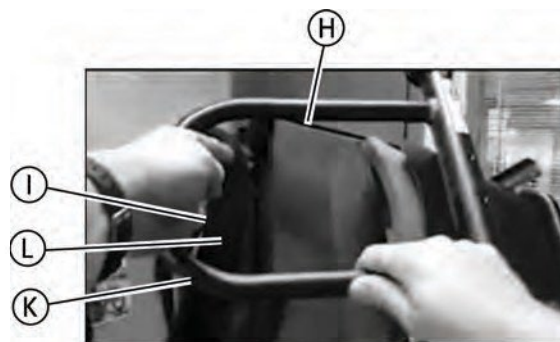


Fig. 7-9

The lower flap I is located on the underside of the cage K. It has loop L sewn into the inside and it attaches to hook H that is sewn onto the underside of the seat upholstery.

7.2 Back Upholstery Adjustment



There are three basic attachment points: Hook and Loop strap at the top, back upholstery strap and lower flap.

Review the component identification chart in the Back Upholstery Components section.

Adjusting the Back Upholstery to be “loose”



If the tension on the back strap is adjusted to be “loose” then the athlete will be positioned further rearward in the cage (this allows the pelvis to go back further in the chair).

If the tension on the back strap is adjusted to be tight, then the athlete will be positioned further forward in the cage (this allows the pelvis to be more forward in the chair).

Adjusting the tension of the back upholstery is a “fine tuning” of the axle position or how tippy the chair feels. This setting (forward or aft in the cage) is each athlete’s personal preference.

Rear View of Back Upholstery Strap G

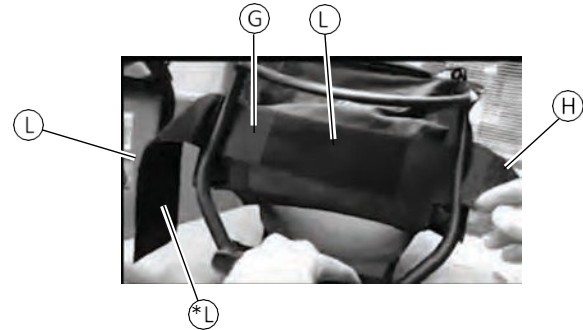


Fig. 7-10

1. Disconnect each side of the back upholstery strap as shown.

Lower Flap adjusted for a “Loose” Fit

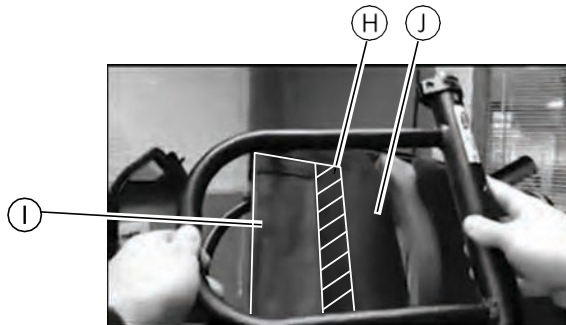


Fig. 7-11

NOTE: White lines are added for illustration purposes only. They do not appear on the upholstery.

2. Disconnect the lower flap I from the hook H on the bottom of the seat upholstery J.
3. Reposition/reconnect the lower flap onto the hook exposing more of the hook. This will allow the back upholstery strap to be lengthened away from the uprights resulting in a “loose” fit.



Fig. 7-12

4. Lengthen the back upholstery strap G by pulling each side of the strap from around the rear uprights F.
5. Reconnect the back strap to the desired tension.
6. After adjusting the back upholstery, adjust the seat cushion as far rearward as possible. Refer to 7.3 *Seat Cushion*, page 35.



This procedure outlines how to adjust the tension in the back upholstery to be a “loose” fit. If you want the tension to be a “tight” fit, follow this same procedure and reposition/reconnect the lower flap so that none of the hook on the underside of the seat is exposed.

7.3 Seat Cushion

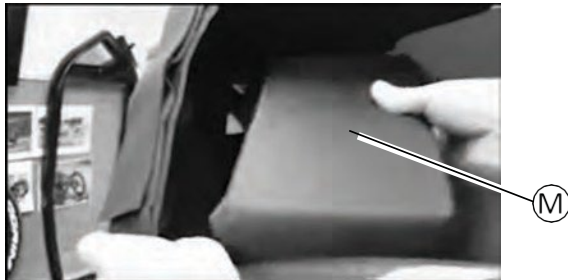


Fig. 7-13

Remove/Install

1. Grab the cushion M and pull up to disconnect the hook and loop that holds the cushion to the seat.



Fig. 7-14

2. Position the cushion as far rearward as possible on the seat.

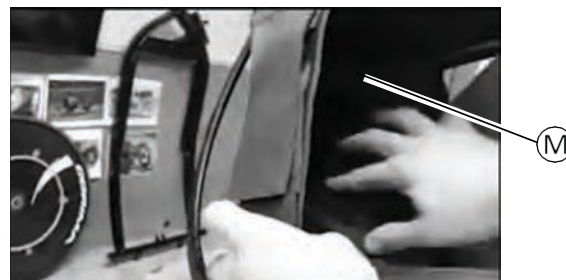


Fig. 7-15

3. Press down on the cushion M to engage the hook and loop and secure the cushion in place.

7.4 Adjusting the Seat Upholstery

Review the component identification chart in the Back Upholstery Components section.

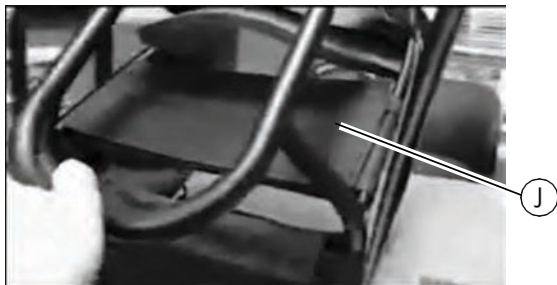


Fig. 7-16

1. Remove the seat cushion.
2. Turn the chair upside down for easier access to the seat upholstery J.

3. Disconnect the lower flap from the underside of the seat upholstery.

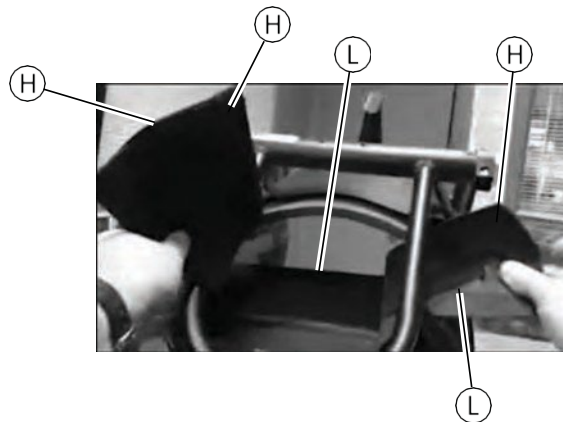


Fig. 7-17

4. Disconnect the left and right sides of the seat upholstery as shown.



Seat Upholstery characteristics are as follows:

- Left side of strap has full size strip of hook on inside and half size trip of hook on the outside
- Underside of the seat has loop
- Right side of strap has hook on the inside and loop on the outside.

Lower Seat Height*Fig. 7-18***Raise Seat Height***Fig. 7-19*

Perform one of the following:

- To Lower Seat Height: Push down on the center portion of the seat upholstery to loosen the tension and allow for a little more slack
- To Raise Seat Height: Pull side straps out to increase tension and allow less slack in the center portion.

*Fig. 7-20*

5. Fold right side down and connect to underside of seat.

*Fig. 7-21*

6. Fold left side down and connect to right side.

8 Wheels

8.1 Determining Toe in and Out

Front of Wheelchair

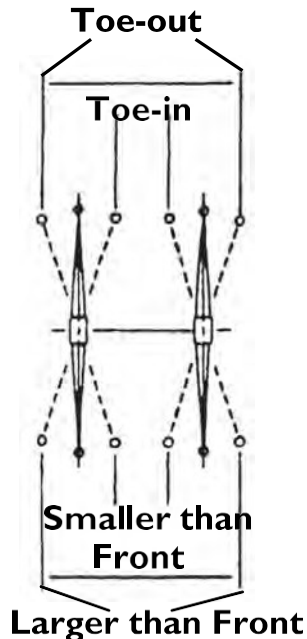



Fig. 8-1

1. Inflate all pneumatic tires to recommended tire pressures (listed on the sidewall of the tire).
2. Measure the distance between the center lines at the rear and front of the rear wheels at approximately 12 inches from the ground/floor
 -  For optimum accuracy, perform STEP 2 with the racing chair occupied.
 - STEP 2 may be performed with using alignment gauge (available as an option for the racing chair).
3. Determine the difference between the two measurements. If the difference between the two measurements is greater than 1/4-inch ($0 \pm 1/8$ inch for maximum rollability), one of two conditions exists:
 - If the rear centerline measurement of the rear wheels is **SMALLER** than the front centerline measurement of the rear wheels, a toe-out condition exists.
 - If the rear centerline measurement of the rear wheels is **LARGER** than the front centerline measurement of the rear wheels, a toe-in condition exists.
4. If the difference between the measurements is greater than 1/8-inch, correct the toe-in/toe-out condition.

8.2 Adjusting Toe in and Out

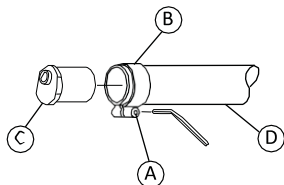


Fig. 8-2

1. Loosen, but do not remove the socket screws A and clamps B that secure camber inserts C to the camber bar D.
2. Slowly rotate each camber insert equally until the rear wheels are approximately in a straight line.
3. Securely tighten the socket screws and clamps that secure the camber inserts to the camber bar.
4. Measure the distance between the center lines at the rear and front of the rear wheels at approximately 12 inches from the ground/floor.
5. Repeat STEPS 1-4 until the toe in/toe out measurement is less than 1/8-inch (for maximum rollability).

8.3 Replacing Camber Inserts

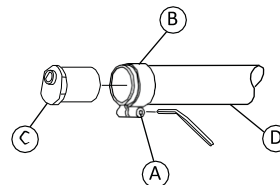


Fig. 8-3

1. Loosen, but do not remove the socket screws A and clamps B that secure camber inserts C to the camber bar D.
2. Remove the existing camber insert from the camber bar.
3. Install the new camber insert into the camber bar.
4. Adjust the toe in/toe out of the racing chair.

9 Brakes

9.1 Adjusting Brake Sensitivity

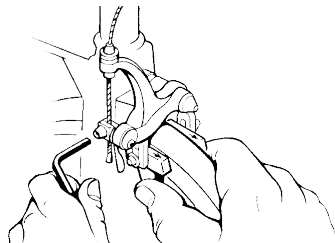


Fig. 9-1



WARNING!

Risk of Injury or Damage

Brake and/or Brake pads not operating properly may result in injury or damage.

- Inspect the brake and brake pads for proper operation and wear. Replace if worn or not operating properly.

1. Loosen the hex screw that maintains the tautness of the brake cable.
2. Squeeze both brake pads with your hand to adjust the brake cable.

3. Loosely tighten the hex screw to ensure that the brake is adjusted properly.



When the brake is engaged, the brake pads should rest solely on the rim of the wheel. If not, adjust the brake pads.

4. Repeat this procedure until the brake is adjusted properly.
5. Securely tighten the hex screw that maintains the tautness of the brake cable.

9.2 Adjusting Brake Pads

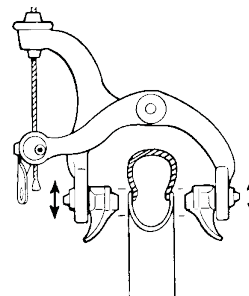


Fig. 9-2

1. Loosen the hex screw A that secures the brake pad B to the brake.
2. Position the brake pad until it is in-line with the rim C of the front wheel D.
3. While squeezing the brake lever, tighten the hex screw to between 8 and 9 Newton-meters to secure the brake pad to the brake.

4. Repeat this procedure for the opposite side.
5. Adjust the brake the brake sensitivity, if necessary.

9.3 Replacing Brake Pads

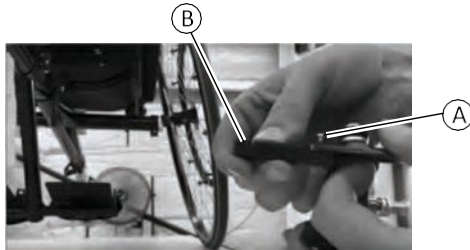


Fig. 9-3



Use a 2- or 2.5-mm hex key for this procedure.

1. Loosen set screw A until the brake pad B can slide out.
2. Slide out the existing brake pad
3. Install new brake pad.
4. Tighten set screw.
5. Repeat for remaining brake pad.

9.4 Adjusting Reach of Brake Lever

Brake Lever positioned farther from brake handle



Fig. 9-4

Brake Lever positioned closer brake handle

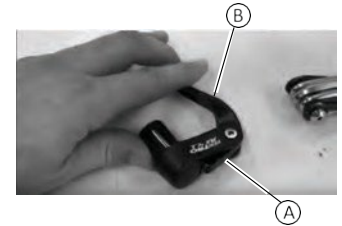


Fig. 9-5



Use a 1.5 mm hex key.

1. Loosen or tighten the set screw A to re-position the brake lever B closer or farther away from the brake handle.

10 Service Procedures

10.1 Replacing Back Upholstery

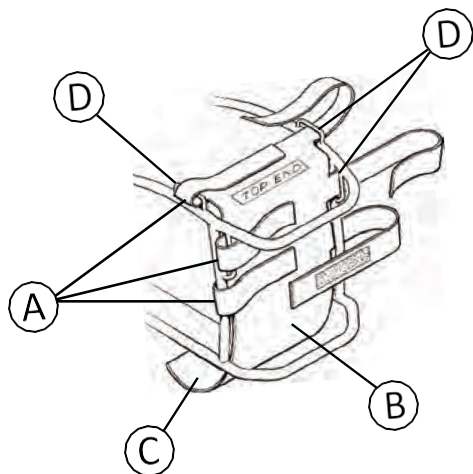


Fig. 10-1

1. Unlatch the fastening flaps A that secure the back upholstery B to the racing chair frame.
2. Unlatch the bottom of the back upholstery C from the seat sling upholstery (Not Shown).
3. Remove the existing back upholstery from the racing chair.
4. Feed the top two fastening flaps of the new back upholstery through the slots E on the racing chair frame.

5. Feed the bottom fastening flap of the new back upholstery between the racing chair frame and the clothing guards.
6. Adjust the back upholstery to the desired tautness.
7. Adjust the back upholstery to the desired tautness.
 - TIGHTER - upholstery will increase the stability and maintain normal maneuverability of the racing chair because the user is pushed forward in the racing chair slightly.
 - LOOSER - upholstery will increase the maneuverability and make the racing chair less stable because additional weight is being distributed onto the rear wheels.

10.2 Replacing Seat Sling Upholstery

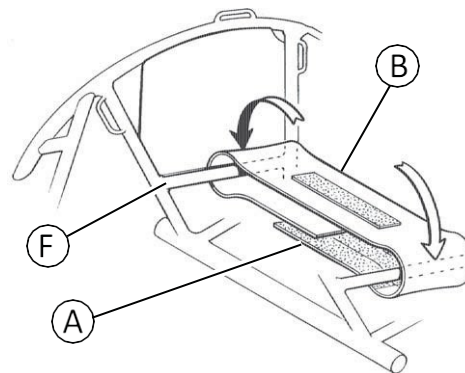


Fig. 10-2

1. Remove seat cushion from seat upholstery.
2. Unlatch the fastening flap A that secures the existing seat upholstery B to itself.
3. Slide the ends of the existing seat upholstery up and through the frame C of the racing chair.
4. Slide the new upholstery through the frame of the racing chair.
5. Pull the seat upholstery to the desired tautness and secure with the fastening flap.
6. Reverse STEPS 1-5 to reassemble.

10.3 Repairing/Replacing Rear Wheel Tire/Tube

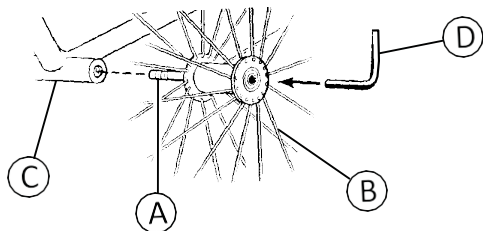


Fig. 10-3



Tubular tires are tires with tubes sewn into the tires. They are high pressure (140+ lbs. psi) and MUST be glued to the rim. Once they have a hole in them, they MUST be replaced. Tubular tires will lose air overnight, but they are not faulty. This is a characteristic of tubular tires. Tubular tires DO NOT fit on a clincher rim.

Clincher tires are like conventional bicycle tires. There is an inner tube separate from the actual tire. They are more durable for longer periods of time and if punctured, the tube can be replaced (by a qualified technician). Clincher tires use 100+ lbs. psi. Clincher tires DO NOT fit on a tubular rim.

1. Loosen the axle A and remove the rear wheel B from the axle tube C. Use 6mm hex key D for Corima wheel and 1/4" hex key D for standard high-performance wheels.
2. Install rear wheel. Refer to initial setup.



WARNING!

Risk of Injury or Damage

- Replacement of a clincher tire or tube MUST be performed by a qualified technician.

10.4 Replacing Push Rims



Fig. 10-4

1. Remove the rear wheel A from the racing chair.
2. Loosen the mounting screws B that secure the existing pushrim to the rear wheel.
3. Remove the existing pushrim.
4. Install the new pushrim onto the rear wheel and securely tighten.



For standard wheel, ensure the rim is pushing onto the spokes at the top of the rear wheel.

5. Reinstall rear wheel onto the racing chair.

10.5 Replacing Front Wheel



Reverse the steps below to remove the front wheel.

There will be some play in the front wheel. This is common in all front hubs.

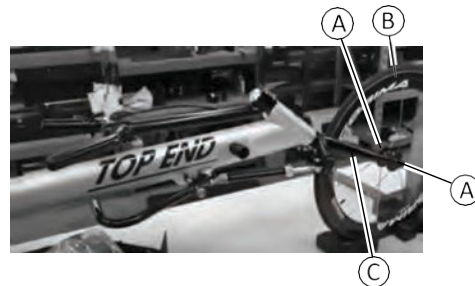


Fig. 10-5

1. Remove the two hex axles A from the front wheel B.
2. Line up the mounting holes in the front wheel with the holes in the forks.
3. Install the hex axles and securely tighten the front wheel to the fork.

10.6 Removing/Installing the Track Control Steering Mechanism

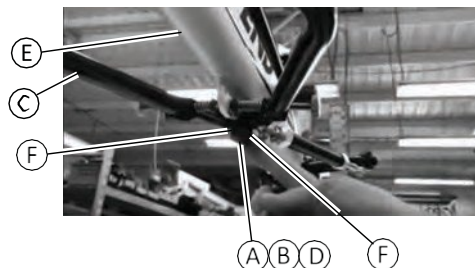


Fig. 10-6

Removing

1. Loosen the set screws F on both sides of the large compensator nut A.
2. Remove the large compensator nut and leather washer B that secures the steering mechanism C to the stem D on the frame E.
3. Remove the track control steering mechanism from the stem.

Installing

1. Secure the steering mechanism C to the stem D on the frame E with large compensator nut A and leather washer B. Tighten securely.

10.7 Compensator Cylinder Replacement



Fig. 10-7



Fig. 10-8



Fig. 10-9



Fig. 10-10

Remove

1. Loosen and remove the nut (not shown) that attaches one end of the compensator cylinder to the track control steering mechanism.
2. Remove the bolt and nut (not shown) that attach the compensator cylinder to the clamp on the fork.

Detail “E”



Fig. 10-11

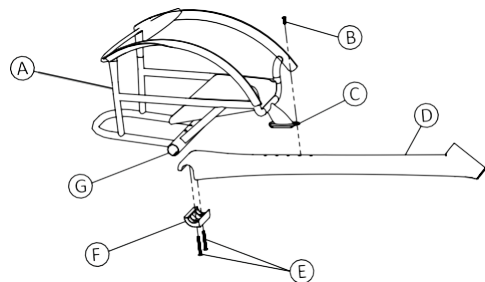
Replace

1. Put the end of the compensator cylinder in place on the clamp (Figure 10-7).
2. Put the screw into the mounting hole on the clamp (Figure 10-8).
3. Put a nut on the end of the screw and tighten securely with an Allen wrench (Figure 10-9).
4. Put the opposite end of the compensator cylinder in place on the track control steering mechanism and attach with a screw and nut (Figure 10-10). Tighten securely with an Allen wrench.



The racing wheelchair should be aligned straight after assembly. Refer to Figure 10-11. The clamp can be moved on the fork if necessary.

10.8 Removing/Installing the Cage



ITEM	DESCRIPTION
A	Cage
B	Mounting Screw
C	Saddle
D	Main Beam
E	Mounting Screws
F	Camber Tube Clamp
G	Camber Tube

Removing



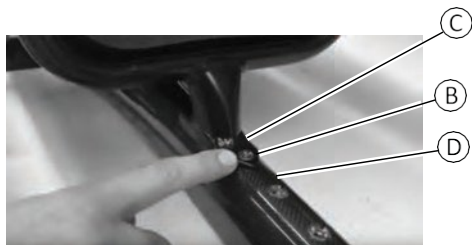
To install the cage, reverse this procedure.

- When securing the cage to the main beam ensure to use serviceable thread locker, preferably Blue Loctite® 243.
- When installing, ensure to securely tighten all three mounting screws to 8–9 Nm (6–7 ft-lb).

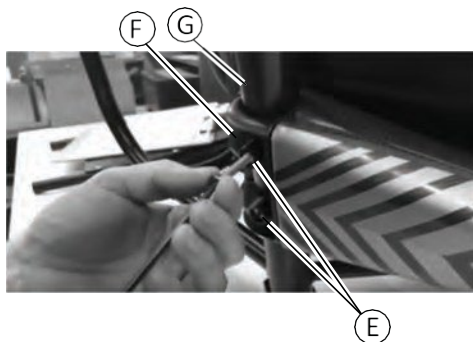


Fig. 10-12

Cage A



1. Using a 4mm hex key, remove the mounting screw B that secures saddle C of the cage to the main beam D.
2. Place the Eliminator NRG on its side.

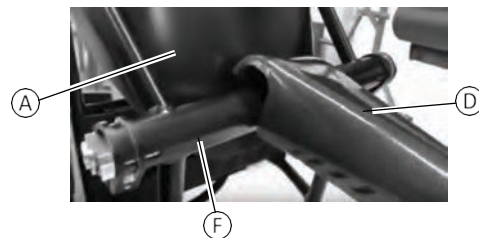


3. Using a 4mm hex key, remove the two mounting screws E that secure the camber tube clamp F and camber tube G to the main beam.

Detail "A"



Detail "B"



Detail "C"



4. Start to pivot the cage backwards (Detail "A")

5. Pivot the cage A completely backwards and then disengage the main beam D from the camber tube F (Detail "B").
6. Separate the cage from the main beam (Detail "C").

11 Maintenance

11.1 Suggested Maintenance Procedures

**WARNING!****Risk of Serious Injury or Damage**

Hardware that is loosely secured could cause loss of stability resulting in serious injury or damage.

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely.

1. Before using your Eliminator NRG, check all parts for damage or wear and replace, if necessary. Check all parts for proper adjustment.
2. Keep axles free of dirt and lint to ensure proper fit in axle receiver. Cross threading will damage the axles and axle receivers on the Eliminator NRG.
3. Check tires for proper pressure and if not inflated properly, inflate to recommended tire pressure listed on the side wall of the tire.
4. The wheels and tires should be checked periodically for cracks and wear and should be replaced by a qualified technician.
5. Regularly check for loose spokes in the rear and front wheels. If loose, have them adjusted by a qualified technician.
6. Periodically check pushrims to ensure they are secured to the rear wheels.
7. Periodically adjust brake in correlation to brake pad wear.

8. Periodically check rear and front 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.

12 Options

12.1 Installing Safety Lights



WARNING!

– Operation of the racing chair is subject to all traffic rules and regulations (this may include the use of a safety lights and reflectors for dusk/night riding).

Batteries

1. Remove the lens cover.
2. Insert the AAA batteries with correct polarity (+ or -).
3. Reinstall lens cover.

Mounting the Safety Light

1. Remove the set screw from the clamp on the safety light.
2. Install the safety light.
 - a. Rear safety light: Pull the back cushion off of the back frame. Position the clamp onto the rear seat post. Install the set screw into the clamp and tighten securely.
 - b. Front safety light: Position the clamp onto the side frame. Install the set screw into the clamp and tighten securely.

Operating the Safety Light

1. Press button to turn safety light on/off.
2. Remove lens cover and slide switch back and forth for pulse or constant mode.

12.2 Using Safety Helmet

Helmet



Fig. 12-1

1. Secure helmet using the chin strap.
2. Ensure proper fit.

12.3 Using the Alignment Gauge

1. Inflate the tires to recommended tire pressures (listed on the sidewall of the tire).
2. Place the racing chair and alignment gauge A on a flat surface.
3. Position the alignment gauge A near the rear of the rear tires B.
4. Loosen the alignment screw on each side.
5. Position the alignment gauge A between the rear of the rear tires B.
6. Adjust the alignment inserts so the alignment gauge A fits snugly between the rear of the rear tires B.
7. Tighten the alignment screws to secure the alignment bar position.

8. Position the alignment gauge A at the front of the rear tires B.
9. Examine the gauge A. Perform one of the following:
 - a. If the alignment gauge A fits snugly between the front of the rear tires, the wheels are aligned. No toe in/toe out adjustment is required.
 - b. If there is extra space between the alignment gauge A and rear tires, the tires have a toe out condition. Refer to Adjusting Toe in Toe Out.
 - c. If the alignment gauge A does not fit between rear tires, the tires have a toe in condition. Refer to Adjusting Toe in Toe Out.

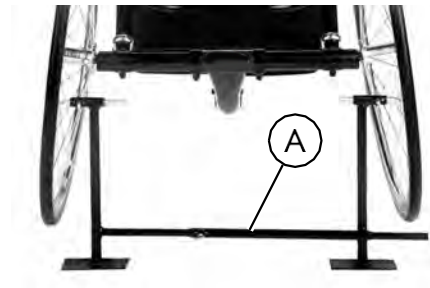


Fig. 12-2

Front of Racing Chair

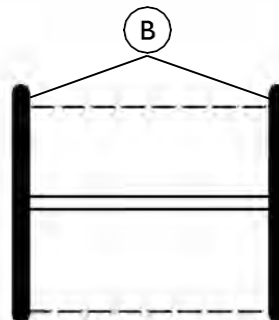


Fig. 12-3

Rear of Racing Chair

13 Warranty

13.1 Warranty

United States Limited Warranty

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

This warranty is extended only to the original purchaser/user of our products.

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

Top End warrants the frames when purchased new and unused to be free from defects in materials and workmanship for a period of three (3) years from the date of purchase from Top End or a dealer, with a copy of the seller's invoice required for coverage under this warranty. Top End warrants the upholstered materials (seat and back) and remaining components of this product when purchased new and unused to be free from defects in materials and workmanship for a period of thirteen (13) months from date of purchase from Top End or a dealer, with a copy of the seller's invoice required for coverage under this warranty.

All component parts including, but not limited to forks, and upholstery are warranted against defects in materials and workmanship for a period of one year from the date of purchase except bushings, bearings, and tires/tubes. If within such warranty period any such product shall be proven to be defective, such product shall be repaired or replaced, at Top End's option, with refurbished or new parts. This warranty does not include any labor or shipping

charges incurred in replacement part installation or repair of any such product. Product repairs shall not extend this warranty. - coverage for repaired product shall end when this limited warranty terminates. Top End's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED, PRODUCTS SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE, COMMERCIAL OR INSTITUTIONAL USE, PRODUCTS MODIFIED WITHOUT TOP END'S EXPRESS WRITTEN CONSENT, INCLUDING, BUT NOT LIMITED TO, MODIFICATION THROUGH THE USE OF UNAUTHORIZED PARTS OR ATTACHMENTS; PRODUCTS DAMAGED BY REASON OF REPAIRS MADE TO ANY COMPONENT WITHOUT THE SPECIFIC CONSENT OF TOP END, OR TO A PRODUCT DAMAGED BY CIRCUMSTANCES BEYOND TOP END'S CONTROL, AND SUCH EVALUATION WILL BE SOLELY DETERMINED BY TOP END. THE WARRANTY SHALL NOT APPLY TO PROBLEMS ARISING FROM NORMAL WEAR OR FAILURE TO ADHERE TO THESE INSTRUCTIONS.

THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE SOLE REMEDY FOR VIOLATIONS OF ANY WARRANTY WHATSOEVER, SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED HEREIN. THE APPLICATION OF ANY IMPLIED WARRANTY WHATSOEVER SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESS WARRANTY

Top End®

PROVIDED HEREIN. TOP END SHALL NOT BE LIABLE FOR
ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES
WHATSOEVER.

THIS WARRANTY SHALL BE EXTENDED TO COMPLY WITH
STATE/PROVINCIAL LAWS AND REQUIREMENTS.

13.2 Limited Warranty—Europe, Australia and New Zealand

Terms and conditions of the warranty are part of the general terms and conditions particular to the individual countries in which this product is sold.

Manufactured by:

Top End Sports and Recreation Products

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Pinellas Park, Florida

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(800) 532-8677



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