

**ULCAN** S.O

Quality for sure, Engineered to Endure

## INTRODUCTION

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Congratulations on your purchase of the **VR Trike**. This model is the result of **Velociracers'** vast experience and the production of fine sporting, touring, and pace setting racing machines. It represents a high degree of craftsmanship and reliability that have made **Velociracers** a leader in these fields.

This manual will give you an understanding of the operation, inspection, and basic maintenance of this trike. If you have any questions about the operation or maintenance of your tricycle, please consult a Technical Engineer from **Velociracers**.

The design and manufacture of this trike is fully eco-friendly, thus reducing air pollution and supporting our GO GREEN motto. It is important that you pay close attention to the recommended maintenance schedules and operating instructions contained within this manual.

## IMPORTANT MANUAL INFORMATION

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Particularly important information is distinguished in this manual by the following notations:  
The Safety Alert Symbol means ‘ATTENTION, BECOME ALERT! YOUR SAFETY IS INVOLVED’.

CAUTION: A CAUTION indicates special precautions that must be taken to avoid damage to the trike.

NOTE: A NOTE provides key information to make procedures easier or clearer.

NOTE: \_\_\_\_\_

- This manual should be considered a permanent part of this trike and should remain with it even if the trike is subsequently sold.
- **Velociracers** continually seeks advancements in product design and quality. Therefore, while this manual contains the most current product information available at the time of printing, there may be minor discrepancies between your trike and this manual. If there is any question concerning this manual, please consult your **Velociracers** dealer or outlet.

## **WARNING**

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**PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING THIS TRIKE. DO NOT ATTEMPT TO OPERATE THIS TRIKE UNTIL YOU HAVE ATTAINED A SATISFACTORY KNOWLEDGE OF ITS CONTROLS AND OPERATING FEATURES AND UNTIL YOU HAVE BEEN TRAINED IN SAFE AND PROPER RIDING TECHNIQUES. REGULAR INSPECTIONS AND CAREFUL MAINTENANCE, ALONG WITH GOOD RIDING SKILLS, WILL ENSURE THAT YOU SAFELY ENJOY THE CAPABILITIES AND THE RELIABILITY OF THIS TRIKE.**

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## **SAFETY INFORMATION**

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Three-wheeled trikes are single track vehicles. Their safe use and operation are dependent upon the use of proper riding techniques as well as the expertise of the operator. Every operator should know the following requirements before riding:

He or she should:

1. Obtain thorough instructions from a competent source on all aspects of trike operation.
2. Observe the warnings and maintenance requirements in the owner's manual.
3. Obtain qualified training in safe and proper riding techniques.
4. Obtain professional technical service as indicated by the owner's manual and/or when made necessary by mechanical conditions.

## **SAFE RIDING**

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1. Always make pre-operation checks. Careful checks may help prevent an accident.
2. This trike is designed to carry an operator and a passenger.
3. The failure of motorists to detect and recognize vehicles in traffic is the predominating cause of automobile accidents. Many accidents have been caused by an automobile driver who did not see the vehicle. Making yourself conspicuous appears to be very effective in reducing the chance of this type of accident.

Therefore:

- a. Wear a brightly colored jacket.
  - b. Use extra caution when you approach and pass through intersections, since intersections are the most likely places for vehicle accidents.
  - c. Ride where other motorists can see you. Avoid riding in another motorist's "blind spot".
4. Many accidents involve inexperienced operators. In fact, many operators who have been involved in accidents do not even have a license.
    - a. Make sure you are qualified. Also, lend your trike only to experienced operators.
    - b. Know your skills and limits. Staying within your limits may help you to avoid an accident.

- c. We recommend that you practice riding your trike where there is no traffic until you have become thoroughly familiar with your trike and all of its controls.
- 5. Many vehicle accidents have been caused by vehicle operator errors. A typical error made by the operator is veering wide on a turn due to EXCESSIVE SPEED.
  - a. Always obey the speed limits and never travel faster than warranted by road and traffic conditions.
  - b. Always signal before turning or changing lanes. Make sure other vehicle operators see you.
- 6. The operator's and passenger's posture are important for proper control.
  - a. The operator should keep both hands on the handlebars and both feet on the pedal during operation to maintain control of the trike.
  - b. The passenger should always hold onto the hand-hold provided and keep both the feet on the pedals.
- 7. Never ride under the influence of alcohol or drugs.
- 8. This trike is designed for on-road use only. It is not suitable for off-road use.



## PROTECTIVE APPAREL

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The majority of fatalities from vehicle accidents are the result of head injuries. The use of a safety helmet is the single most critical factor in the prevention or reduction of head injuries.

1. Always wear an approved helmet.
2. Wear a face shield or goggles. Wind on your unprotected eyes could contribute to an impairment of vision which could delay seeing a hazard.
3. The use of heavy boots, jacket, trousers, gloves, etc. is effective in preventing or reducing abrasions or lacerations.
4. Never wear loose fitting clothing. It could catch on the control levers, footrests, or wheels and cause injury or accident.

## MODIFICATION

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Modifications made to the trike, not approved by **Velociracers**, or the removal of original equipment, may render your trike unsafe for use and may cause severe injuries. Modifications may also make your vehicle illegal to use.

## **LOADING AND ACCESSORIES**

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Adding accessories or cargo to your trike can adversely affect its stability and handling. By doing so, the weight distribution of the machine is changed. To avoid the possibility of an accident, extreme caution should be used while adding cargo or accessories to your trike. Use extra care while riding a trike which has added cargo or accessories.

### **LOADING**

The total weight of the operator, passenger, accessories and cargo must not exceed the maximum load limit of 340 kg.

When loading within these weight limits, keep the following in mind:

1. Cargo and accessory weight should be kept as low and close to the trike as possible. Be sure to distribute the weight as evenly as possible on both sides of the machine to minimize imbalance or instability.
2. Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the trike before riding. Recheck accessory mounts and cargo restraints frequently.

3. Never attach any large or heavy items to the handlebars, front forks, etc. These items, including such cargo as sleeping bags, duffle bags or tents can create unstable handling or slow steering response.

## **ACCESSORIES**

Genuine **Velociracers** accessories have been specifically designed for use in this trike. Since **Velociracers** cannot test all other accessories which may be available, you must personally be responsible for the proper selection, installation and use of non-Velociracers accessories. You should use extreme caution when selecting and installing any accessories.

1. Never install accessories or carry cargo that would impair the performance of your trike. Carefully inspect the accessory before using it to make sure it does not, in any way, reduce ground clearance or cornering clearance, limit suspension travel, steering travel or control operation, or obscure lights or reflectors.

a. Accessories fit to the handlebar or the front fork area can create instability due to improper weight distribution or aerodynamic changes. If accessories are added to the handlebar or front fork area, they must be as lightweight as possible and should be kept to a minimum.

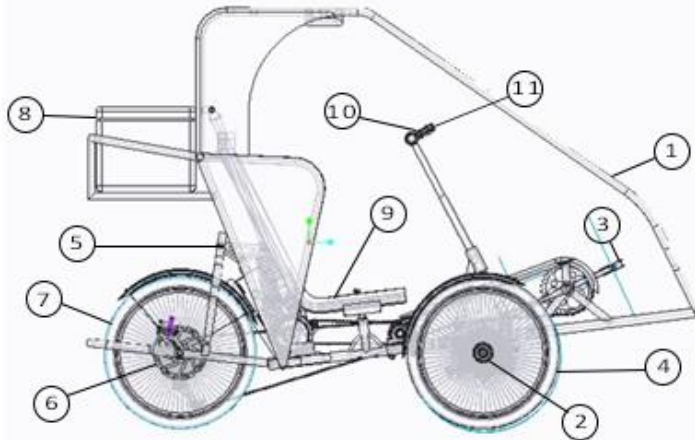
b. Bulky or large accessories may seriously affect the stability of the trike due to aerodynamic effects. Wind may attempt to lift the trike, or the trike may become unstable in cross winds. These accessories may also cause instability when being passed by or passing large vehicle.

c. Certain accessories can displace the operator from his or her normal riding position. This improper position limits the freedom of movement of the operator and may limit control ability. Therefore, such accessories are not recommended.

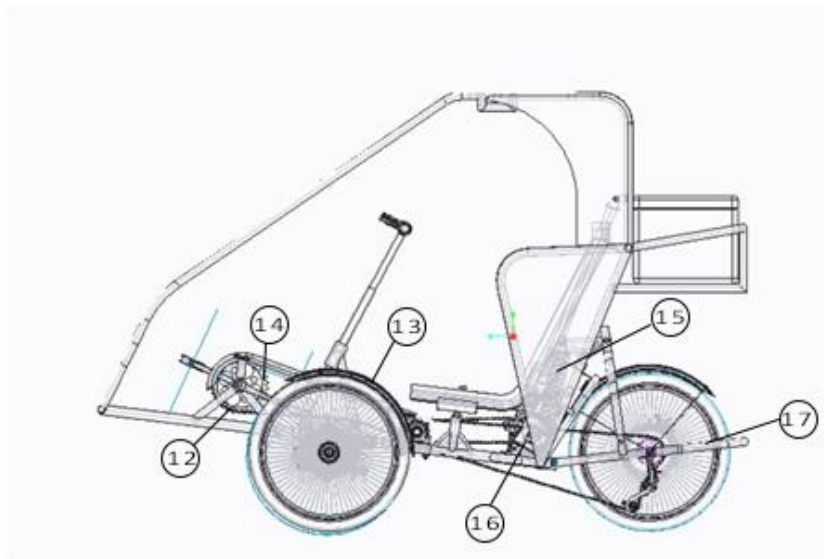
2. Caution must be used while adding electrical accessories. If these accessories exceed the capacity of the trike's electrical system, an electric failure could result, which could cause a dangerous loss battery power.

## DESCRIPTION

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1. Frame
2. Front Suspension
3. Pedal
4. Front tyre
5. Rear Suspension
6. Brake disc
7. Rear tyre
8. Utility box
9. Seat
10. Handle
11. Brake lever



- 12. Chain
- 13. Mud guard
- 14. Sprocket
- 15. Power Bank
- 16. Speedometer setup
- 17. Battery Level Indicator

## **INSTRUMENT AND CONTROL FUNCTIONS**

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### **1. IoT Based Data acquisition system**

VR Connect app is to be installed compulsorily by the user in order to view the current vehicle status.

### **2. Anti-Theft system**

Anti-Theft system, mounted on the steering, immediately senses the movement of the vehicle and notifies it on the VR Connect app.

### **3. GPS Tracker**

The GPS tracking system is mounted behind the battery for tracking the vehicle.

### **4. Battery Level Indicator**

This indicator, mounted alongside the battery, gives the current battery status.

### **5. Speedometer**

Speedometer updates the user with the instantaneous speed of vehicle on VR Connect app. It is mounted on the rear wheel.

**6. Rear brake hand lever**

The rear brake hand lever is located on the right handlebar. Pull it towards the handlebar to apply the rear brake.

**7. Front brake hand lever**

The front brake hand lever is located on the left handlebar. Pull it towards the handlebar to apply the front brake.

**8. Gear shifter & Throttle**

Gear shifter is used to change gears so as to vary speed of vehicle and throttle controls speed of vehicle.

**9. Kill switch**

Kill switch is an emergency switch to isolate electrical connections in vehicle.

**10. Mobile holder**

Mobile holder on the central part of the handle is provided so that the user can operate the VR Connect app and track the vehicle.



## **PRE-OPERATION CHECKS**

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Owners are personally responsible for their vehicle's condition. Your trike's vital functions can start to deteriorate over time. Any damage, fluid leak or loss of tire pressure could have serious consequences. Therefore, it is very important that, in addition to a thorough visual inspection, you check the following points before each ride:

### **PRE-OPERATION CHECK LIST**

1. Front brake-Check operation, free play and brake shoe wear.
2. Rear brake-Check operation and brake pad wear.
3. Drive chain-Check chain slack and condition. Lubricate if required.
4. Throttle grip and housing-Check for smooth operation. Lubricate if necessary.
5. Battery-Check fluid level. Fill with distilled water if necessary.
6. Lights, signals and switches-Check for proper operation.
7. Wheels and tires-Check tire pressure, wear and damage.
8. Chassis fasteners-Make sure that all nuts, bolts and screws are properly tightened.

## OPERATION AND IMPORTANT RIDING POINT

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### WARNING

Before riding this trike, become thoroughly familiar with all operating controls and their functions. Consult a **Velociracers** dealer regarding any control or function that you do not thoroughly understand.

To start out and accelerate

1. Enter properly into the trike using the quick release mechanism.
2. Grip the handle firmly and put feet on pedals properly.
3. Then start pedaling the trike manually.
4. Thus power is transmitted from front sprocket to rear wheel through idler shaft.
5. The trike can be driven by BLDC motor provided in it.
6. To accelerate motor, throttle is provided on handle.
7. The power from motor is transmitted through chain and cassette to rear wheel.

To decelerate

1. Apply both the front and the rear brakes at the same time to stop the trike.
2. Gradually apply the rear brake to reduce the speed of trike.

## **PERIODIC MAINTENANCE AND MINOR REPAIRS**

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Periodic inspection, adjustment, and lubrication will keep your trike in the safest and most efficient condition possible. Safety is an obligation of the trike owner. The most important points of trike inspection, adjustment, and lubrication are explained in the following pages.

Maintenance, replacement, or repair of the transmission and electrical control devices and systems may be performed by any repair establishment or individual using any part which is certified (if applicable).

### **WARNING**

If you are not familiar with trike service, this work should be done by a **Velociracers** dealer.

### **Periodic maintenance**

Proper periodic maintenance of your trike is important in order to enjoy long and pleasurable service. Especially important are the maintenance services related to the electric motor. These controls function to ensure proper vehicle operation and maximum performance. **Velociracers** dealers are trained and equipped to perform these particular services.

**Tool kit**

The service information included in this manual is intended to provide you, the owner, with the necessary information for completing some of your own preventive maintenance and minor repairs. The tools provided in the owner's tool kit are to assist you in the performance of periodic maintenance.

**NOTE:**

If you do not have necessary tools required during a service operation, take your trike to a **Velociracers** dealer for service.

Sr. No.	ITEM	Remarks	Period from Purchase of Vehicle					
			1 Month	6 Months	12 Months	24 Months	36 Months	60 Months
1	Drive Train	Check chain condition. Adjust and lubricate chain thoroughly						
2	Braking System	Adjust free play. Replace pads if necessary.						
3	Front fork	Check operation and leakage						
4	Rear suspension spring	Check stiffness and operation.						
5	Steering Bearings	Check bearing assembly for looseness						
6	Wheel bearing	Check bearing for smooth operation						
7	Battery	Check battery for operation						

## **CLEANING AND STORAGE**

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### **CLEANING**

Frequent, thorough cleaning of your trike will not only enhance its appearance but will improve its general performance and extend the useful life of many components.

#### **CAUTION:**

- Improper cleaning can damage the windshield, panels and other plastic parts. Use only a soft, clean cloth or sponge with mild detergent and water to clean plastic. If the windshield is scratched, use a quality plastic polishing compound after washing.
- Do not use any harsh chemical products on plastic parts. Be sure to avoid using cloth or sponge which have been in contact with strong or abrasive cleaning products, solvent or thinner, fuel (gasoline), rust removers or inhibitors, brake fluid, antifreeze or electrolyte.

Excessive hose pressure may cause water seepage and deterioration of wheel bearings, front fork, brakes, transmission seals and electrical parts.

Many expensive repair bills have resulted from improper high-pressure detergent applications such as those available in coin-operated car washers.

After riding on salted roads, wash the trike with cold water immediately. Do not use warm water as it increases the chemical reaction of the salt.

Once the majority of the dirt has been hosed off, wash all surfaces with warm water and mild, detergent-type soap. An old toothbrush or bottle brush is handy for hard-to-get-at places

## **STORAGE**

Long term storage (60 days or more) of your trike will require some preventive procedures to guard against deterioration. After thoroughly cleaning the trike, prepare for storage as follows:

1. Clean the chain and lubricate it.
2. Lubricate all control cables.
3. Block up the frame to raise both wheels off the ground.
4. If storing in a humid or salt-air atmosphere, coat all exposed metal surfaces with a light film of oil. Do not apply oil to any rubber parts or the seat cover.
5. Remove the battery and fully charge it. Store it in a cool, dry place and recharge it once a month. Do not store the battery in an excessively warm or cold place (less than 0°C (30°F) or more than 30°C (90°F)).

## SPECIFICATIONS

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<b>MOTOR</b>	
Type	Series type BLDC motor
Rated RPM	1500
Max. power	0.54 HP (400 Watt)
<b>DRIVE TRAIN</b>	
Manual	Individual chain drive
Electric	BLDC motor
Gearbox	Inline Planetary type
<b>CHASSIS</b>	
Chassis material	AISI 1018
Overall length	80" (203.2 cm)
Overall width	53" (134.62 cm)
Overall height	61" (154.94 cm)
<b>SUSPENSION</b>	
Front suspension	Fork suspension



Rear suspension	Single pivot type
Ground clearance	8" (20.32 cm)
<b>STEERING</b>	
Steering	Four bar mechanism
No.of links	4
<b>WEIGHT</b>	
Kerb weight	92 kg
Gross weight	342kg
Weight distribution	50:50
<b>WHEELS</b>	
Front	20"
Rear	28"
<b>PERFORMANCE</b>	
Top speed	45 km/hr.
Acceleration	0.95 m/s <sup>2</sup>
Turning radius	2.78 m
Braking distance	3.5 m

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