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A guide to your vehicle



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TRISLED USER MANUAL Glossary

FAIRING:

A type of shell or cover encasing a bicycle or tricycle. Fairings can be made from a range of materials such as corflute, composites and polyethylene (plastic). A tricycle with a fairing suitable for road use is called a velomobile.

HUMAN POWERED VEHICLE (HPV):

A vehicle powered solely by a person (or persons) without the use of any other power-assistance. Referred to in this manual as 'vehicle' or 'HPV'.

RACING HPV:

A human powered vehicle designed specifically for Australian HPV racing events and built to comply with the scrutineering requirements of this racing format. A racing HPV is not designed for road use.

RECUMBENT:

A cycling format which places the rider in a reclined seating position with the pedals at the front of the vehicle.

TRICYCLE (trike):

A three wheeled bicycle (HPV). Also referred to as a 'trike'.

VELOMOBILE:

A human powered recumbent tricycle with an aerodynamic fairing which improves the speed, performance and weather protection of the vehicle.

Please read this manual thoroughly to familiarise yourself with your Trisled vehicle before use. You should also carefully read our Terms and Conditions as you are bound by the terms contained therein. Terms and Conditions of Sale would have been provided to you during the sales process if your purchased your vehicle direct from Trisled. General Terms and Conditions are also located at http://www.trisled.com.au/legal.asp

If you have any questions regarding the safety, operation or maintenance of your new Trisled vehicle, contact us or your Trisled dealer.

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TRISLED USER MANUAL 1. About This Manual

Congratulations on purchasing a Trisled! Our unique vehicles are a wonderful tool for transportation, racing and recreation. We hope that you will have a great deal of use and enjoyment from your purchase.

At Trisled, we are not only accomplished manufacturers, but also passionate human powered vehicle (HPV) enthusiasts. Our extensive HPV experience is combined with innovative designs, advanced materials and methods, and extensive testing to create some of the finest HPVs available.

As the owner of one of our unique Australian vehicles, we are sure your itching to try it out! Trisled's design ethos of simplicity and usability should make your riding experience naturally intuitive. However, there are important safety, performance and maintenance issues that you must be aware of, and strictly comply with, before you begin using your vehicle and during any times when you use your vehicle.

This manual is intended for users of all Trisled vehicle models and is divided into a number of sections. Sections 1–2, 4–5 and 7–9 are applicable to all models. Section 3 is only applicable to owners of our 'on the road' and 'carry the load' models, which are safe to ride on the road. Section 6 is only applicable to 'on the track' models, which are built for Australian HPV racing conditions. If you are unsure which category your vehicle falls into, please check our website (www.trisled.com.au) or contact us.

We strongly urge you (and your team, employees and other users of Trisled vehicles) to read the relevant sections before you ride. This manual will help you get the most of your new vehicle and, most importantly, provide essential safety information and warnings specific to the Trisled model range. In addition to the main body of text, a number of warnings and cautions are highlighted to alert you to significant safety issues.

GENERAL WARNING:

Like any sport or vehicle format, cycling (and velomobiling, triking and HPV racing) involves risk of injury, damage, death and/or disability. By choosing to ride a Trisled vehicle, you assume the responsibility for that risk, so you need to know - and to practice - the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your vehicle may help reduce risk of accident, injury, damage or death.

Because it is impossible to anticipate every situation or condition which can occur while riding, this manual makes no representation about the safe use of every Trisled vehicle under any and all conditions. There are risks associated with the use of any human powered vehicle which cannot be predicted or avoided, and which are the sole responsibility of the rider or their guardian.

Trisled has no responsibility for such risks and you recognise the hazardous nature of your vehicle.

IMPORTANT NOTE:

This manual is not intended as a comprehensive use, service repair or service manual. It is merely a guide. Please see Trisled or your dealer for all service, repairs and/or maintenance queries. Please read our Terms and Conditions located at http://www.trisled.com.au/legal.asp

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TRISLED USER MANUAL 2. Before you ride

The excitement of riding a Trisled vehicle for the first time can be exhilarating, especially when riding with others. You need to make sure you do not forget safety precautions, traffic laws and common sense!

Riding a Trisled vehicle will probably feel different to riding a conventional bicycle. The braking distance will differ, as will your stopping distance and manoeuvrability. You cannot always move backwards in some of our vehicles, so it is also important to familiarise yourself with the turning circle and how to use foot wells (if these are included).

After carefully reading this manual and our Terms and Conditions, we recommend taking your new vehicle to a quiet off-road area (like a vacant sporting ground or car park) away from cars, other cyclists, obstacles and potential hazards to practice the following techniques and manoeuvres, and to familiarise yourself with your new vehicle.

2.1 Safety check

Before you set off on your first ride, make sure you check the following items are all in order. If they are not or you are not sure, you will need to contact Trisled or your Trisled dealer before you attempt to ride.

- · Handlebars secured and clamps tight
- Front boom secured and set up to correct rider height (see section 2.6)
- · Wheels properly installed and quick-releases tightened
- · Chain installed properly through derailleurs and idlers
- Derailleurs properly installed and shifting smoothly through all gears
- Tyres properly inflated
- Front, rear and wheel reflectors properly installed, and not obscured
- Seat properly installed, adjusted and tightened
- Hatch fits securely to fairing (for velomobile models)
- · Brakes and parking brakes (on some models) operational
- No other loose or moving parts

WARNING:

Make sure you check your vehicle for any faults or defects before you ride it. Also make sure you have fully understood how to operate your brakes, gears, pedals and all other operating systems before you ride your vehicle for the first time. Failure to do so may cause injury, damage, accident or death. If you have any questions, or if you feel anything about your vehicle is not as it should be, contact Trisled or your dealer for advice.

CAUTION:

It is normal for cables and assembled parts to settle and 'bed in' during the first days of riding. It is important to go over the vehicle carefully during this period and adjust anything that's loosened up. That means all fasteners, especially the axle bolts and the tie rod nuts and bolts.



2. Before you ride

2.2 Braking

All Trisled models are equipped with two independent braking systems as required by Australian law. These are located in different places depending on the model you are using. If you are not sure where these are located or how to use them, conduct your first ride with a Trisled representative or dealer.

Ride to become familiar with the brakes, handling and performance of your new vehicle. Squeeze one brake slowly to feel the way the vehicle turns slightly and how to compensate with the steering. Then squeeze both brakes and try to bring them on evenly. Applying brakes too hard can lock up your wheels, which could cause you to lose control and fall off or roll your vehicle. Braking at high speeds could overheat your brakes and cause them to fail. Do not attempt to touch your brakes if they have overheated as they are likely to burn you.

Some Trisled vehicles also have quick-release parking brakes. Familiarise yourself with how these work and make sure you use them when the vehicle is stationary. After a few weeks these will 'bed in' (as will your main brakes) and may need to be tightened. Consult Trisled or your bicycle mechanic if you are not sure how to do this. If the parking brake is not on when you attempt to get in or out of your Trisled vehicle, you increase the risk of injury to yourself and others as the vehicle may roll away from you. If your vehicle doesn't have a parking brake, make sure you squeeze the brakes as you enter or mount the vehicle and always ensure it is securely locked or immobilised when it is stationary.

CAUTION: Trisled vehicles are not a heavy vehicle like a car. The rider can be ten or more times heavier than the vehicle. Therefore, the weight and riding style of the rider can exert total control over the capabilities of the vehicle. For this reason, it is absolutely imperative to your safety that you learn the limitations of the vehicle and strictly ride within them.

2.2.1 Braking in the recumbent position

If you do not have experience riding on three or four wheels in the recumbent position, you may notice pedal and/or brake steer for the first few rides. This means that when you push hard on the pedals or grab one brake harder than the other it causes the vehicle to swerve. Trisled vehicles have been designed to minimise both pedal and brake steer and as you gain more experience, pedal and brake steer will become much less noticeable. To minimise pedal steer, make sure your upper body is completely relaxed, and your pedal stroke is smooth and at a fairly high cadence. You can minimise brake steer by braking smoothly and evenly on both brakes. Try not to over control the vehicle. Trisled's steering is extremely responsive and only requires small, fluid movements to change direction.

2.3 Turning

You will need to learn the limitations of your vehicle and how fast you can safely take corners. This will differ depending on the type of vehicle you are riding (and the track width for velomobile, racing HPV and trike models). As a general rule of thumb, a narrower track width may mean that the point where the vehicle will want to go up on two wheels is likely to be sooner. However, this will also be moderated by additional variables, such as the vehicle's centre of gravity, the rider's weight and seat position, and any load you may be carrying.

If you are riding a three or four-wheeled vehicle, it is possible to get it up on two wheels, but you should try to avoid this situation, as it may cause you to fall off, roll, or crash your vehicle and increase your risk of injury. It can also overload the bicycle wheels, causing premature failure. It is possible to go safely around a corner at speed if you lean into the inside of the corner, relax your upper body, and pedal smoothly. Remember to use common sense and to ride within the limits of your vehicle.

In order to turn safely on the road, you will need to learn how to indicate with your hand or with the in-built indicators (included with some velomobile models). Practice riding slowly and taking one hand off a handlebar to indicate the direction you wish to turn. Can you still steer and brake safely? If you find indicating by hand difficult, you may need to consider an indicator lighting system for your vehicle. Contact Trisled or your Trisled dealer for advice.

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2. Before you ride

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2.4 Changing gears

Learning how to change gears properly is something that can take a bit of practice. Because each Trisled model is geared slightly differently, you will need to practice pedalling and changing through the gears. Try to keep the pedals spinning all the time at a comfortable speed, and do not try to jump too many gears at once as this may cause your chain to drop off the cog. The key to changing gears is to anticipate when you will need a lower or higher gear and change down or up just before you need it (i.e. before you start going up a hill or stop at a traffic light). This will minimise wear and tear on the chain and ensure the most efficient pedalling stroke.

CAUTION: Never move the gear shifter while pedalling backward, nor pedal backwards after having moved the shifter. This could jam the chain and cause serious damage to the vehicle.

2.5 Vision

Being able to see properly on the road or racing track is imperative to your safety. If you are in an enclosed vehicle (like some racing HPVs and velomobile models) and you do not have adequate vision, you may need to adjust your seating position, or practice riding without the windscreen. Do not ride if you cannot see properly!

Knowing what is happening behind you is also important to ensure you are able to take fast evasive action. While you are practicing how to brake, turn and change gears, also attempt to look behind you. Can you turn safely without swerving? Can you see behind you with ease? If you find this task difficult, you may need to fit one or two mirrors (included standard on some of our models). Contact Trisled or your Trisled dealer for advice on appropriate mirrors for your vehicle.

2.6 Seat position

Correct fit is essential for your safety, performance and comfort. Trisled vehicles have a number of different seating configurations. The majority of 'on the road' and 'carry the load' models have either an adjustable boom or seat post. To find the right seat position on our trike and velomobile models, sit in the vehicle. Lift your foot and rotate the pedal counter-clockwise to the extended position. Sit with your back firmly against the seat and your leg fully extended. Your heel should rest squarely on the pedal.

If your knee is bent, move the boom as required and bring your heel to the pedal with your leg held straight. Try pedalling in this position and think about whether you are comfortable. If not, make incremental adjustments until you find a comfortable position. You may need to add extra padding or head rests.

If you are riding one of our recumbent models, make sure the boom clamp is tight enough so the boom does not twist while you pedal. Just like a bicycle seat post clamp, it is the rider responsibility to check for the boom clamp tightness. If for any reason you are unable to install or tighten the boom clamp, do not ride your vehicle. Contact Trisled or your Trisled dealer. Failure to do so might cause the boom to twist and cause serious injury or death.

If you are adjusting the vehicle to fit another rider, make sure that the chain is the right length. In order to get the maximum possible gear range, the Trisled drive train pushes the derailleurs close to their maximum capacity. The chain must be long enough to handle the big chain ring/big cog combination. If it is too short, it is possible to severely damage the drive train. You can get away with a slightly slack chain, but never ride with a chain that is too short.

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2. Before you ride

2.6.1 Setting the seat position for multiple riders

This section provides advice on how to set up Trisled's racing HPV models for multiple riders in a HPV team.

- 1. Put your tallest rider in first and adjust the boom to suit them (see Section 2.6 on how to adjust the boom). If your vehicle has a sliding seat system, make sure it is fully extended before you set up the boom for this rider. If you have a seat padding system, ensure your tallest rider has the least possible padding.
- 2. Make sure that the chain is the right length for your tallest rider (see Section 2.6).
- 3. Now put your shortest rider in the vehicle. Adjust the sliding seat system to suit them or use a temporary seat pad to get an idea of the support they will need. Do they fit? Can they see? You may need to construct a booster seat system for your shortest rider(s) to get the full range of extension and vision required. This will need to pad the rider both up and forward in the vehicle. Make sure both your tallest and shortest riders are comfortable.
- 4. If you do not have a sliding seat system, we suggest you group your riders together (shortest to tallest) to form seat 'teams'. Under supervision and guidance, use soft and hard foams to construct bolster seat systems (get your riders to try them out in the vehicle before they glue/attach them together). Shorter riders will need more padding both underneath their buttocks and behind their back (to pad them up and forward).

2.7 Pedalling

In order to get the most out of the recumbent position, we recommend you use 'clipless' pedals (sometimes called 'step-in' pedals) which require special cycling shoes (with cleats).

These pedals will allow you to push and pull through the entire pedal stroke. You also need to make sure your cleats are secure in the pedals so that your feet do not fall out. For non-recumbent vehicles, open or toe-strap pedals may be appropriate. Check with Trisled or your Trisled dealer if you are unsure about the most suitable pedal option for your situation, or how to set up your pedals and cleats safely.

WARNING: Always ensure you shoes and feet are firmly clipped into your pedals. Failure to do so may result in you falling off your vehicle. In recumbent vehicles, if your feet fall off the pedal and hit the road or track at speed, they may get caught underneath the vehicle.

2.8 Riding a load tricycle (MAXI)

Trisled's load range features our MAXI (tricycle) series as well as more specific custom machines. These vehicles are characterised by their ability to carry people or bulky/heavy load. A MAXI load vehicle (tricycle) might look like a normal bicycle, but it doesn't ride like one! For a start, you do not need to put your feet down when you stop like you would on a conventional bicycle. The biggest thing to get used to is that your MAXI will go where you point the front wheel. It will not bank into corners like a conventional bicycle. This means that when the street is slanted to one side, your MAXI will feel like it is pulling you towards the curb. This is normal, and due to the fact that the MAXI does not bank. You can compensate for this by steering the MAXI slightly in the opposite (uphill) direction.

You will also need to make sure you practice turning the front wheel and moving in a tight circle before you attempt to carry passengers or loads on the road. The MAXI range is very maneuverable, and has a much smaller turning radius than a bicycle. Become familiar with the feeling of shifting your weight during turns. This will compensate for the fact that MAXIs do not bank. Make sure you ride with both hands on the handlebars. If you're riding a MAXI Taxi (Rickshaw), make sure you never overload it by carrying more than 2 adult passengers or 3 small children.

TRISLED USER MANUAL 3. Riding on the road

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and should be very careful to comply with all road rules and laws in your local area. Remember that any poor road behaviour reflects on all users of the vehicle format you are using, and cyclists in general. Please support our aims of ensuring that HPVs are given legitimate road-using status by complying with all road rules.

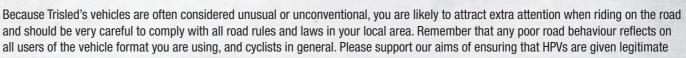
Trisled's 'on the road' and 'carry the load' models are built to comply with all current Australian cycling laws and regulations (with the exception of Western Australia for some models). Whether you are riding your Trisled vehicle in Australia or another country, it is your responsibility to familiarise yourself with the laws of the areas where you ride, and to comply with all applicable laws and safety requirements.

Observe regulations and laws regarding bicycle lighting, bicycle indicating, licensing of bicycles, riding on sidewalks, bike path and trail use, helmet usage, parking and child carrier requirements. If you do not comply with these laws and regulations your safety may be compromised, increasing your risk of serious injury or death. You may be arrested, issued with a fine, or attract a criminal record.

In some of our faster road-going vehicles like our velomobile models, other road users will assume that you have a motor inside because of the high speeds you are capable of reaching. Be aware that drivers, cyclists and pedestrians may misjudge your speed because you may be travelling faster (or slower) than a conventional bicycle. Ride defensively and predictably. Swerving in and out of the bike lane and the main road may compromise your safety and is likely to aggravate all other road users resulting in a potentially hazardous situation.

The following website provides website links to relevant Australian bicycle laws as well as several guides to riding safely on the road: www.woj.com.au/australian-road-authority-links

CAUTION: It is your responsibility to ensure that your vehicle is compliant with all current cycling laws and regulations in your local area and that you are riding to in compliance with these laws and regulations.



3. Riding on the road

3.1 Maximise your safety on the road

Make sure that you apply common sense to riding on the road, just as you would with any other vehicle. Remember to:

- Respect the rights of other road users including motorists, pedestrians and other cyclists.
- Ride defensively, predictably and assertively. Always assume that others do not see you.
- Be ready to avoid potential accidents caused by:
 - Other vehicles in your vicinity
 - Vehicles located in your blind spot
 - Sitting in other vehicles' blind spots
 - Parked car doors opening
 - Pedestrians stepping out
 - Children or animals near the road.
 - Obstructions that could cause you to swerve into traffic, catch your wheel or chain. or otherwise cause you to lose control of your vehicle.
- Stay out of gutters and pot holes.
- Ride at a safe distance (minimum 1 meter) away from parked traffic
- Ride in designated bike lanes where possible and travel in the direction of traffic flow.
- Observe and obey all road signs and traffic lights.
- Use approved hand signals or indicators for turning and stopping.
- Never ride with headphones. They mask traffic sounds and their wires can tangle in the moving parts of the bicycle. causing you to lose control.
- Ensure that you, and any passengers (if in a load-carrying machine) are always wearing an approved helmet as required by law. Follow the helmet manufacturer's instruction for fit, use and care of your helmet.
- Never carry anything which obstructs your vision or your complete control of the vehicle, or which could become caught in vehicle parts.
- Never hitch a ride by holding onto another vehicle.
- Always secure any moving parts (such as a velomobile hatch) before riding.
- Ride within your limitations and avoid undertaking risky activities such as stunts, wheelies or jumps.
- Never ride your vehicle while under the influence of alcohol or drugs.
- If possible, avoid riding in bad weather, when visibility is obscured, at dusk or in the dark, or when extremely tired. Each of these conditions increases the risk of accident.
- Never operate a mobile phone or other handheld or mobile device while riding. It might distract you from the road and increase your risk of accident.

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3. Riding on the road

3.2 Being seen

Like any vehicle, it is important to be seen on the road and have a large body of bright area. Trisled riders can maximise their road presence through the use of bright coloured stickers, lights, reflectors, panniers, a bright fairing and/or flags. Many of these features come standard on our models. Make sure you do not obstruct any in-built reflectors or lights when you are carrying loads or otherwise using your vehicle.

Using these safety features does not guarantee you will be seen (or that other road users will look!) You still need to be aware of blind spots and unobservant drivers, and make sure you allow for them when riding. A good rule of thumb is to remember that if you haven't made eye contact with the driver or rider of a vehicle, they haven't seen you! Remember to keep at least a meter away from parked traffic and make sure you always allow enough distance to stop safely and take evasive action if required.

To maximise your visibility on the road, we recommend you take the following safety precautions:

- Purchase a bright coloured vehicle and use reflective tape on bodies of area such as on fairings, carriages, or the back of seats.
- Use a bright coloured reflective flag (such as the Trisled SLD flag) on our trike models.
- Purchase and install head and tail lights which meet all regulatory requirements in your local area and provide adequate visibility for the conditions.
- Regularly check and/or charge your light batteries to ensure they are working at peak performance.
- If you are riding a load-carrying vehicle that is wider than normal bicycle dimensions (i.e. wider than the handlebars of a road or mountain bike), install lights on the widest points of the vehicle.
- Wear light colored, reflective clothing and accessories.
- Make sure that your vehicle is always equipped with correctly positioned and securely mounted reflectors.

3.3 Riding downhill and in extreme conditions

Brakes are not just there to help you stop; they are also there to control and monitor your speed. This is particularly important for Trisled's velomobile and trike models, which are capable of reaching speeds much faster than a conventional bicycle. Just as it is not safe (or legal) to drive a car at the fastest possible speed, riding a velomobile, tricycle or any HPV at high speed is extremely dangerous and will increase your risk of serious injury or death.

The extra speed potential of many Trisled vehicles is a product of their aerodynamic efficiency. It is not intended to help you achieve the fastest possible speed downhill, but rather to improve your efficiency, reduce your power output, and assist with maintaining your speed at all other times. Most Trisled vehicles have two independent braking systems. Especially at high speed or when riding downhill, it is mandatory that you use both brakes at the same time and with the same intensity. If you only use one brake, this could cause the vehicle to steer off course and crash, causing serious injury or death.

We recommend the use of a speedometer to ensure you comply with local speed limits and learn your vehicle's limitations. This is particularly important for users of Trisled's velomobile models, where reduced wind resistance may cause you to misjudge your speed, particularly on your first few rides. Vehicles may also handle differently at high speeds, and your braking ability is likely to be compromised. For this reason, avoid excessive speed going downhills.

When riding fast in any Trisled vehicle, you can reach speeds seen on motorcycles, and therefore face similar hazards and risks. Have your vehicle and equipment regularly and carefully inspected by Trisled or a qualified bicycle mechanic and be sure it is in perfect condition. If you plan to attempt a descent, wear appropriate safety gear, including an approved full face helmet, full finger gloves, and body armor. If you notice any burning smells or smoke coming from the brakes, stop immediately and do not attempt to continue with the descent. This is the first sign that your brakes are beginning to fail.



3. Riding on the road

Although some Trisled vehicles can be ridden on dirt roads if equipped with more rugged tyres, they are not designed for all-terrain, off-road use. Check with Trisled or your Trisled dealer for appropriate off-road conditions for your specific model. Be aware that riding in off-road conditions will affect the way your vehicle handles and performs, and will increase your risk of serious injury or death.

Above all, know your limits and be aware that even with state-of-the-art protective safety gear, you could be seriously injured or killed. It is your responsibility to have proper equipment, protective gear and to be familiar with road conditions, local speed restrictions and laws and the limits of your vehicle.

WARNING: Riding down steep descents or engaging in extreme riding is very dangerous, increases your risk of accident, injury or death, and increases the severity of any injury. Trisled vehicles and the bicycle and fairing parts they use have limitations with regard to strength and integrity and this type of riding can exceed those limitations.

3.4 Wet weather conditions

During wet or slippery conditions, the stopping power of your brakes (as well as the brakes of other vehicles sharing the road) is dramatically reduced and your tyres do not grip nearly as well. This makes it harder to control speed and easier to lose control. To make sure that you can slow down and stop safely in wet conditions, ride more slowly and apply your brakes earlier and more gradually than you would under normal, dry conditions.

WARNING: Wet weather impairs traction, braking and visibility, both for the cyclist and for other vehicles sharing the road. The risk of an accident, injury or death is dramatically increased in wet conditions.

3.5 Snowy and icy conditions

Trisled vehicles are made and tested in temperate Australian conditions. We have not tested our vehicles in snowy or icy conditions. We therefore do not recommend you use our vehicles in these conditions. However, if you choose to disregard this warning, we recommend you ride with extreme caution.

WARNING: Trisled vehicles are not tested in snowy or icy conditions. We do not recommend you ride our vehicles in these conditions, where the risk of accident, injury and death is dramatically increased.

3.6 Windy conditions

Windy conditions, particularly crosswinds, can cause bicycles, tricycles and HPVs to veer suddenly in one direction. This may be disconcerting for the rider and lead to a potentially hazardous situation. We recommend that you avoid riding your vehicle in windy conditions which may affect the performance of your vehicle. If you find yourself in a windy condition, slow down and ride with both hands on the handlebars. Try not to overcompensate by steering aggressively in the opposite direction to the wind.

WARNING: Riding in windy conditions can cause your vehicle to veer dangerously off the road or into traffic, increasing your risk of accident, serious injury or death. Avoid riding in windy conditions (or other extreme weather conditions).

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3. Riding on the road

3.7 Hot and cold conditions

Different Trisled vehicles have different levels of weather protection and ventilation. You need to ride to suit the conditions and limits or your vehicle. Be aware that if the weather is excessively hot or cold, it may not be safe to ride your vehicle and you may need to seek an alternative form of transportation. Health problems that may result from riding in very hot or cold weather include heat stress, dehydration and hypothermia.

If you are riding on a hot day, exercise common sense by wearing loose, protective clothing, sunglasses and sunscreen, and make sure you drink lots of fluid. Moderate your heart rate by riding slowly. If it is very cold, you may need to wear additional layers of clothing and other protective gear such as gloves, hats and glasses.

WARNING: Extreme hot or cold conditions can increase your risk of accident, injury or death, and may cause life threatening health problems, such as dehydration, hypothermia or heat stress.

3.8 Night riding

Riding any vehicle at night is more dangerous than riding during the day and may greatly decrease your visibility and other road users' ability to see you. If you chose to accept the greatly increased risk of riding at dawn, dusk or night, you need to take extra care both riding and choosing specialised equipment which helps reduce that risk. Consult Trisled, your dealer or your local bicycle shop about night riding safety equipment best suited to your vehicle.

Bicycle reflectors are designed to pick up and reflect street lights and car lights in a way that may help you to be seen and recognised as a moving vehicle. Check reflectors and their mounting brackets regularly to make sure they are clean, straight, unbroken and securely mounted.

WARNING: Do not remove or damage the front or rear reflectors or reflector brackets from your vehicle. They are an integral part of the vehicle's safety system and are required by law. Removing or damaging the reflectors may reduce your visibility to others using the road. Being struck by other vehicles may result in accident, injury or death.

3.9 Riding with children

Trisled's 'on the road' and 'carry the load' models are designed for adult use only. They are not toys and should be kept away from children. Moving parts may cause serious injury or death if operated or played with by children. Accidental dislodgement of a parking brake by a child may result in a serious accident involving your vehicle, child and other people in the vicinity. If riding with a child as a passenger, you need to ensure that they are supervised at all times, adequately restrained on or within the vehicle in a manner which complies with all relevant laws and regulations, and wear an approved bicycle helmet.

As a parent or guardian, you are responsible for the activities and safety of your children or children within your care, and that includes making sure that the vehicle is properly fitted to the child; that it is in safe operating condition; that you and your child have learned and understood how to operate the vehicle; and that you and your child have learned, understood and obey not only the applicable local motor vehicle, bicycle and traffic laws, but also the common sense rules of safe and responsible cycling.

CAUTION: Trisled vehicles are not toys. 'Road' and 'load' models are not safe for children under the age of 18 to ride. Make sure you keep your Trisled vehicle out of reach of children. Failure to do so may result in accident, injury or death. You are responsible for ensuring you comply with all safety regulations when carrying children on your vehicle. Your vehicle should only be ridden by qualified and experienced riders.



3. Riding on the road

3.10 Carrying load

When you carry load on or in your vehicle, it is likely to handle differently. It may also affect the braking distance required to stop safely and the overall performance of your vehicle. If you are riding a 'carry the load' model, make sure you practice carrying load in a guiet area away from hazards and obstacles before you attempt to ride on the road. If your vehicle suddenly begins to handle differently, stop immediately and inspect for problems. Observe all load limits that are advised by Trisled, and if you are not sure what the limits are for your particular model, make sure you contact Trisled or your dealer for advice.

It is your responsibility to ensure that your load is properly secured to your vehicle and complies with all local laws and regulations. Make sure you are load doesn't obscure any safety devices, such as lights, reflectors and mirrors, and doesn't protrude beyond the dimensions of your vehicle. Be especially careful of any load that could interfere with the braking or steering mechanisms or touch the wheels when in motion.

WARNING: Carrying load will affect the handling, braking and performance of your vehicle, increasing your risk of accident, injury or death. It is your responsibility to familiarise yourself with the vehicle under load and ensure it is properly secured. Do not overload your vehicle!

3.11 Velomobile fairings

Velomobile fairings (i.e. the shell encasing the frame) are not a structural element of Trisled vehicles. Fairings provide the rider with a basic level of protection against weather conditions and some road hazards (such as stones and debris on the road surface). However, they can also provide riders with a false sense of security. Unlike Trisled's 'on the track' models, velomobile fairings do not have roll-bar or overhead protection. They are not designed as a form of crash protection, but rather as a tool to improve your aerodynamic performance.

Make sure you exercise the same caution riding with a fairing as you would riding any other vehicle and do not assume that it will protect you against hazards or accidents or reduce your risk of injury. Trisled manufactures velomobile fairings from a range of materials including polyethylene (plastic) and composite materials (fibreglass, Kevlar and carbon fibre). Velomobile hatches are made from composites, PETG plastic and neoprene. Check with Trisled or your dealer if you are unsure which fairing and hatch system is specific to your model.

Polyethylene (plastic) velomobiles are shock-resistant and low maintenance. However, they can be deformed if they are not stored properly. They are also heavier than composite velomobiles. Composite material produces a lighter velomobile than polyethylene (plastic). Our fibreglass-Kevlar-carbon velomobiles are constructed for high-performance, combining lightness and elasticity. However, these vehicles must be handled with care because they are thinner-skinned and less durable than polyethylene velomobiles. Both plastic and composite velomobiles must be protected from ultraviolet rays in order to protect their colours (see Section 4.2).

WARNING: Velomobile fairings are not designed as a form of crash protection. Never deliberately roll or crash a vehicle. Crashing any vehicle with a fairing will increase your risk of accident, serious injury and death.

3.12 Alcohol and other drugs

Using your vehicle is a demanding and complex task. Skilled operators pay attention to the environment and to operating your vehicle, identifying potential hazards, making good judgements and executing decisions quickly and skillfully. Your ability to perform and respond to changing road and traffic conditions is influenced by how fit and alert you are.

Alcohol and other drugs degrade your ability to think ahead and operate your vehicle safely. As little as one drink can have a significant effect on your performance. Avoid alcohol and other drugs and operate your vehicle responsibily.

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TRISLED USER MANUAL 4. Transport and storage

4.1 Transporting your vehicle

Some Trisled vehicles can be safely transported using bicycle (and tricycle) tow-bar carriers and/or roof racks. It is your responsibility to ensure that the transportation system you are using is suitable for your Trisled vehicle and is securely fitted to your motor vehicle. Other Trisled vehicles may fit inside motor vehicles or trailers.

Your primary concern in carrying your vehicle is that it is securely fastened to the vehicle. Leaving a velomobile or racing HPV in a hot motor vehicle or in other hot conditions may result in the vehicle's fairing warping (see Section 4.2).

CAUTION: Ensure your Trisled vehicle is firmly secured to your motor vehicle during transport.

4.2 Storing your vehicle

Your Trisled vehicle should be stored out of direct sunlight in a well ventilated area, away from children, and in a location that does not get extremely hot. It is always best to store your vehicle indoors, out of direct sunlight and protected from weather. Polyethylene (plastic) fairings will soften a little if exposed to extremely hot conditions.

Composite fairings may emit unpleasant fumes in the first few months of usage if stored in confined or hot conditions. Storing any vehicle in direct sunlight may cause the colour to fade and lead to premature fatiguing of the vehicle and its components.



5. Maintenance and care

5.1 General maintenance

Your Trisled vehicle is designed to be as maintenance-free as possible. However, like other bicycles, your vehicle needs to be regularly serviced and maintained. The frequency at which you need to maintain your vehicle will vary depending on what type of vehicle you own, how much you are riding it, and what type of activity you use it for. For example, a racing HPV will probably need more maintenance and care than a recreational recumbent used infrequently for personal use. If you are unsure how often you need to maintain your vehicle, please contact Trisled or your Trisled dealer.

Before each ride, look over your vehicle and check for anything unusual, such as loose bolts, fasteners or components. Always check your tyre pressure before each ride, and check to ensure all brake and gear cables are properly connected. You should also check your wheel rims and tyres regularly for wear. If you are not sure what to look for, ask your local bicycle mechanic, Trisled, or your Trisled dealer. Trisled vehicles use a combination of Presta (French) and Shrader (car) style valves. On some Trisled vehicles, tyres can be changed on the left and right front wheels without removing the wheel, simply by turning the vehicle onto its side. The rear wheel drops out of most of our 'on the road' and 'on the track' models using a guick-release system. For information on other wheel systems and how to change a tyre on a specific model, please visit the relevant FAQ section on our website, or contact Trisled, your Trisled dealer, or your local bicycle mechanic.

Always keep your tyres inflated to the recommended pressure (printed on the tyre sidewall). Do not over inflate your tyres. The tubes are not entirely airtight, and the tyre will lose pressure over time. Some Trisled vehicles will scrub the tyres a bit, so they may not last as long as they would on a conventional bicycle. Overly aggressive riding will also shorten tyre life. Many new owners tend to over-lube the chain. It should not be dripping with lube. A properly lubricated chain looks dry and clean. Use your favorite lube and follow the instructions.

Do not unnecessarily expose your vehicle to the elements. Watch for any signs of corrosion or fatigue and promptly touch up any areas of paint damage on the frame. Failure to notice and respond to changes or deterioration on your vehicle may cause components or structural parts to fail, which can cause you to lose control and crash.

WARNING: Like any mechanical device, a Trisled vehicle and its components are subject to wear and tear. Different materials and mechanisms fatigue from stress at different rates and have different life cycles. If a component's life cycle is exceeded, it can suddenly and catastrophically fail, causing accident, injury or death. Cracks, fraying and discoloration are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and needs to be replaced.

5.2 Adding components and accessories

There are many components and accessories available to enhance the comfort, performance and appearance of your vehicle. However, if you change components or add accessories, you do so at your own risk. Aftermarket items such as fairings, tail boxes, load compartments and other items not specifically engineered for your vehicle may adversely affect handling and safety, and their suitability is the sole responsibility of the rider. Trisled may not have tested that component or accessory for compatibility, reliability or safety on your vehicle.

Before installing any component or accessory, including a different tyre, make sure that it is compatible with your vehicle by checking with Trisled or your dealer.

WARNING: Changing, removing or adding components and accessories to your vehicle may change the way your vehicle rides or cause components and structural parts to prematurely and catastrophically fail resulting in an increased risk of accident, injury or death. Your vehicle should only be repaired or maintained by appropriately qualified and experienced personnel.

Trisled shall not be responsible for damage through normal wear and tear, neglect, overloading, incorrect assembly, modifications or changed components, theft, failure to follow instructions or warnings in this manual or activities for which the vehicle was not designed or intended.

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TRISLED USER MANUAL

5. Maintenance and care

5.3 Maintaining light systems

Some of Trisled's velomobile models come with LiPol light systems and battery packs. Like all electronic devices, light systems are potentially hazardous if misused or modified. To avoid hazardous situations, observe the following safety precautions with your lighting system:

- Do not burn.
- Do not short-circuit the terminals. Keep it away from metallic objects when not in use.
- Avoid water or any fluid entering the battery back and lighting system.
- Do not expose the battery to temperatures exceeding 60oC as this may cause the battery (and vehicle) to overheat, explode or catch fire.
- Use only the provided charger.
- · Keep away from children.
- Do not disassemble and do not dispose of in fire.

To prevent damage and prolong service life:

- Charge within the temperature range of 10oC and 35oC. Cooler temperatures required longer charging time, or in some cases stop charging al all. Warmer temperatures prevent complete charging, or in some cases stop charging at all
- · Store in a cool, dry place.
- Fully charge and then fully discharge the battery every 6 months when storing the battery pack for a long period of time.

WARNING: The battery packs for light systems used in Trisled models may present a fire or chemical burn hazard if mistreated or misused.

5.4 Cleaning your vehicle

Keeping your vehicle clean will maximise its lifespan. Wash it from time to time, but avoid the use of pressure washers or harsh chemicals, which can wash away necessary lubricant. It is better to use a bucket of water, mild detergent and a soft brush. If you own one of Trisled's polyethylene velomobiles such as Rotovelo, small marks, grease and dirt can be easily removed with Mineral Turpentine. Follow the safety advice on the bottle.

CAUTION: Never use strong solvents, such as acetone lacquer thinners, on your vehicle as these can seriously damage the finish of your vehicle.



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TRISLED USER MANUAL

5. Maintenance and care

5.5 Useful maintenance tools

You need to carry a few tools with you in your vehicle in case it breaks down, just as you would if you were traveling in a car or on a bicycle. You should never go for a ride without the following basic equipment:

- Allen keys (wrenches) suitable for tightening various clamping bolts that may loosen while riding.
- Patch kit, tyre levers and spare inner tube.
- A good quality bicycle pump with correct head to fit your tyre valves.
- Some kind of identification (in case of an accident).
- A few dollars in cash (to make a phone call or buy some food or drink).

5.6 Adding electric or motor assist systems

Trisled strongly discourages you from retrofitting electric-assist motors to your vehicle. Aside from adding additional weight which may make your vehicle harder to pedal, electric assist motors may create additional risks, such as increased speed. Trisled vehicles are designed to maximise the speed potential of human power and are already capable of reaching high speeds (see Section 3.3). Adding electric or motor assist systems to your vehicle may result in the failure of structural parts and components which are not designed to support these systems.

WARNING: Trisled strongly discourages against the installation of any electric or motor assist system to any of our vehicles. Retrofitting electric or motor assist systems to a increases your risk of accident, serious injury and death.

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TRISLED USER MANUAL 6. Australian HPV racing

This section provides specific information for our 'on the track' model range, which is designed solely for Australian HPV racing. As a teacher or team leader of a HPV racing team, it is your responsibility to ensure that your riders and their guardians are aware of this important information and the inherent risks involved in Australian HPV racing.

WARNING: Riding and racing Trisled's 'on the track' racing HPVs may result in increased risk of accident, injury and death. As a teacher or team leader of a HPV racing team, it is your responsibility to ensure that all riders and their guardians are aware of and accept the risks involved.

6.1 Choosing a vehicle

Trisled racing vehicles are sold at various stages of completion and are built to cater for different levels of skill and competition. When choosing an appropriate vehicle for your team, you will need to carefully consider what is and is not included, and what parts and accessories are required to ensure training can commence as soon as possible. You will also need to realistically consider what skills, expertise, resources and time your school and/or team has available to build and assemble your vehicle.

You should not simply choose the most expensive vehicle your school or team can afford, but rather the vehicle which best suits the riding skills and commitment of your team. An expensive, high-end racing HPV will not deliver a top result if you and your team do not put the time and effort into learning how to ride and race it. For advice on the most appropriate vehicle for your team, please contact Trisled.

6.2 Assembling your vehicle

As a general rule, Trisled models do not include race-ready accessories, such as mirrors, lights, a horn, seatbelt, spare tyres, tubes or wheels. Most of these components are available from our online store (www.trisled.com.au), with the exception of seatbelts and horns. The recommended supplier of seatbelts for Australian HPV Racing is Hemco (http://www.hemco.com.au/hpv.html). Trisled's seats include mounting points for these seatbelts. Horns and horn parts can be purchased from Jaycar or a similar electronics store. Contact Trisled for specific recommendations on all other race-ready components.

Some Trisled racing vehicles also require the assembly of a fairing. Instructions may or may not be provided depending on the complexity of the model. If you are unsure how to proceed, please contact Trisled for advice. We recommend that fairings are assembled in a supervised environment with a qualified technical teacher or equivalent. You are responsible for ensuring you and your team have access to and are wearing all appropriate safety equipment and gear, and comply with all appropriate safety regulations while assembling your fairing. Trisled does not accept any responsibility for the failure or incorrect installation of any fairing which we have not assembled and fitted to the vehicle, even where we have provided advice. For this reason, we strongly recommend that you test your vehicle and its fairing in a supervised training environment before racing it.

6.3 Training

Good preparation is absolutely vital to ensuring your team is race-ready and to minimise your riders' risk of accident and injury. The best preparation you can give your race team is lots of time in the vehicle (or a vehicle very similar to the one) they will be racing. While training on upright bicycles might get your team fit, it will not give them the necessary handling skills they require for a racing situation. Remember that every racing vehicle is likely to handle differently. Section 2 provides a general list of features riders should familiarise themselves with during a supervised training environment. To ensure you maximise your team's vehicle time, we recommend you place any orders for new vehicles early in the racing season.

You can also attempt to replicate the conditions your team will be racing in by constructing or utilising a training course with similarly positioned corners, descents and ascents. We recommend training in an environment with multiple vehicles and teams, so that your riders get used to being on track with other vehicles. You should also ensure that your riders have adequate night training and are equipped to deal with issues such as fog and rain, particularly if you are racing in a 24-hour event.



6. Australian HPV racing

6.4 Scrutineering

It is your responsibility to ensure you comply with all relevant HPV scrutineering requirements. As these vary between races and are subject to yearly changes, we recommend you check all requirements carefully before you prepare your vehicle for a race. While Trisled endeavours to ensure all our racing models are compliant with scrutineering requirements, we cannot guarantee that this will be the case due to frequent changes and inconsistency in the application of rules.

Trisled can provide advice on scrutineering requirements, and recommend methods of complying with them. However, we cannot guarantee that this advice and these methods will be approved by racing scrutineers.

6.5 HPV Racing

Racing a HPV can be a fun, exciting and exhilarating experience, but it also comes with serious risks. Accidents and racing incidents are common in Australian HPV racing. It is your responsibility to ensure that your riders and their guardians understand and accept the risks associated with HPV racing, including the risk of serious injury or death to themselves and others. It is also your responsibility to minimise this risk where possible.

Some of the ways you can do this are by ensuring that your vehicle is properly maintained (see Section 5) and that riders:

- Do not have any pre-existing medical conditions that may be exacerbated or aggravated by riding and racing a HPV.
- Are familiar with how to stop and swerve suddenly and safely.
- Are able to ride around a tight corner and take the best line.
- Are able to ride in poor visibility conditions, such as at night, in the rain, and in fog.
- Do not use hatches or windscreens, and/or have extra ventilation holes in conditions where visibility is extremely poor or in very hot conditions (Trisled can advise on where these should be placed to ensure you minimise aerodynamic drag).
- Know and comply with all race rules and safety requirements for the specific event.
- Are familiar with how to identify and avoid potentially hazardous obstacles (such as slower and faster vehicles).
- Are calm when entering and exiting the vehicle.
- Report any racing incidents to the team manager as soon as they occur and ensure that the vehicle is thoroughly checked for potential hazards and fatigue before racing is resumed.
- Are immediately asked to exit the vehicle when they display aggressive or inappropriate riding behaviour.
- Are adequately hydrated before and after they get into the vehicle
- Have warmed up and warm down before entering and after exiting the vehicle.
- Wear appropriate clothing and safety equipment.
- Get enough sleep during the race and do not ride the vehicle when extremely fatigued.
- Regularly check the vehicle for any signs of stress and fatigue during racing conditions and immediately report any potential hazards or problems to the team manager.

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TRISLED USER MANUAL 6. Australian HPV racing

WARNING: Trisled vehicles and the bicycle and fairing parts they use have limitations with regard to strength and integrity and this type of racing can exceed those limitations. Components suffering from stress fatigue can fail suddenly and catastrophically, causing loss of control, injury or death.

WARNING: Crashing a Trisled vehicle can compromise its integrity and performance and increase the risk of serious injury or death. It is your responsibility to ensure that your vehicle is properly maintained and serviced for racing conditions before, during and after a race.

6.6 Riding a racing HPV on the road

Trisled's 'on the track' racing HPVs are not designed for road use. If you choose to ride these vehicles on a road, it is your responsibility to ensure they are compliant with all relevant road rules, that riders have adequate front and rear vision, and that the vehicle is appropriately suited to the terrain (see Section 2).

WARNING: Trisled's 'on the track' racing HPVs are not designed for road use and may not be compliant with relevant laws and safety requirements. Riding a racing HPV on the road may increase your risk of accident, injury or death.

TRISLED USER MANUAL 7. If you crash

In the unfortunate event that you do have an accident on the track or road, do not panic! First, check yourself for injuries, and take care of them as best you can. Call emergency services in your local area if you are seriously injured or visit on-site first aid if available at your HPV racing event. Next, check your vehicle for damage, and fix what you can so you can get home or finish the race.

If your vehicle is not able to be fixed, arrange alternative transportation for you and your vehicle. Then take your vehicle to Trisled, a Trisled dealer, or a good local bicycle mechanic for further assistance and a thorough check over.

WARNING: A crash or other impact can put extraordinary stress on bicycle components, causing them to fatigue prematurely. Components suffering from stress fatigue can fail suddenly and catastrophically, causing loss of control, damage, injury or death.



TRISLED USER MANUAL 8. End of life

Riding your vehicle or using components that have reached the end of their useful life is hazardous. The length of your vehicle's lifespan will depend on a number of variables, such as the construction and materials used in the frame and components, the maintenance and care they have received throughout their lifetime, and the type and amount of use to which they have been subjected.

Australian HPV racing, other competitive events, stunt riding, jumping, aggressive riding, riding with heavy loads, and other types of nonstandard use can dramatically shorten the life of your vehicle and its components. Any one or a combination of these factors may result in an unpredictable failure.

As a general rule of thumb, lighter vehicles and their components will have a shorter life than heavier vehicles and their components. In selecting a lightweight vehicle you are making a trade off between performance and longevity. For this reason, make sure you have lighter vehicles inspected more frequently to protect against failure.

In general, you should have your vehicle serviced periodically by Trisled, a Trisled dealer or a qualified bicycle mechanic to check for indicators of stress and/or potential failure, such as cracks, deformation, corrosion, pain peeling and dents. Trisled can advise on appropriate frequencies of inspection and service based on how and where you use your vehicle. These checks will help reduce your risk of accident, injury, and shortened product life.

There are many second-hand outlets for Trisled vehicles if you find that you wish to replace it or no longer have a need for it. Trisled is able to advise on the best on-sell outlets for your second-hand vehicle.

Trisled prioritises recyclable parts where possible (such as our corflute and polyethylene fairings) and we ask that you will follow through with our intentions when your vehicle or a component reaches the end of its serviceable life by recycling parts where possible.

WARNING: Frequent inspection of your vehicle is imperative to your safety. Have your vehicle regularly inspected by Trisled, a Trisled dealer, or a qualified bicycle mechanic for any signs of stress or fatigue (or similar). Ignoring this warning can lead to catastrophic failure of your vehicle and/or its components, resulting in accident, injury or death.

TRISLED USER MANUAL

9. Additional assistance

Our goal at Trisled is to keep you satisfied! We stand behind the quality, materials and workmanship of all our vehicles. In the unlikely event a problem develops with your vehicle, we will try to resolve the issue as easily and quickly as possible. Please contact us for assistance.

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