

ATV Maintenance



- **ATV Maintenance Schedules and Service Intervals**

ATV Maintenance Schedules and Service Intervals How to plan regular service for your ATV Key steps for creating a seasonal ATV maintenance plan Essential fluids to change in your ATV and when to change them How often to replace filters on different types of ATVs Checklist for pre-ride inspections to avoid mechanical issues Signs that your ATV is due for professional servicing Understanding the difference between hours and mileage intervals How to prepare your ATV for long term storage Tips for keeping an accurate ATV maintenance log Why seasonal tune ups improve ATV reliability How to schedule preventative maintenance before major trips Common maintenance tasks to extend the life of your ATV

- **Diagnosing and Troubleshooting Common ATV Issues**

Diagnosing and Troubleshooting Common ATV Issues How to identify the cause of engine stalling in an ATV Steps to troubleshoot electrical problems in your ATV Why your ATV may lose power under load and how to fix it Simple checks to find the cause of poor ATV acceleration What to do when your ATV struggles to start in cold weather Understanding common overheating problems in ATVs How to track down unusual noises in your ATV drivetrain Signs of brake system issues in your ATV How to tell if your ATV has a slipping CVT belt Techniques for testing fuel delivery problems in ATVs How to spot early signs of bearing or bushing wear Finding the source of vibration while riding an ATV

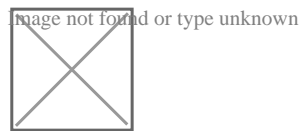
- **About Us**



trips

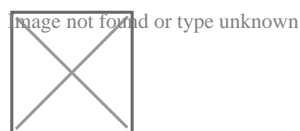
Certainly! Spotting small issues early avoids major repair bills [atv illinois for sale](#) Powersports Vehicles. Heres an essay on how to schedule preventative maintenance before major trips, written in a human-like style:

Embarking on a major trip, whether its a cross-country road trip, a family vacation, or a business journey, is always exciting. The anticipation of new experiences, the thrill of the unknown, and the joy of exploration are all part of the adventure. However, amidst the excitement, its crucial not to overlook the importance of scheduling preventative maintenance for your vehicle. Ensuring your car is in top condition before hitting the road can make the difference between a smooth journey and a series of frustrating breakdowns.

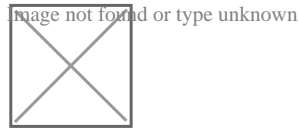


First and foremost, scheduling preventative maintenance begins with a thorough understanding of your vehicles needs. Every car is different, and the maintenance requirements can vary based on the make, model, and age of the vehicle. Start by consulting your cars owner manual. This document is a treasure trove of information, providing specific guidelines on when and what type of maintenance is needed. Pay close attention to the recommended service intervals for oil changes, filter replacements, and other essential checks.

One of the most critical aspects of preventative maintenance is ensuring that your cars engine is in optimal condition. This involves regular oil changes, which are vital for lubricating the engines moving parts and preventing excessive wear and tear. Additionally, checking the engines air and fuel filters is essential. Clogged filters can reduce engine efficiency and performance, leading to increased fuel consumption and potential breakdowns.



Tires are another crucial component to inspect before a major trip. Properly inflated tires not only improve fuel efficiency but also enhance safety by providing better traction and handling. Check the tire pressure and tread depth, and don't hesitate to replace tires that show signs of wear. Additionally, ensure that the spare tire is also in good condition, as you never know when you might need it.



The braking system is another area that demands attention. Brakes are the most critical safety feature in any vehicle, and ensuring they are functioning correctly is non-negotiable. Have a professional mechanic inspect the brake pads, rotors, and brake fluid. If any components are worn or damaged, they should be replaced immediately to avoid any risk of failure while driving.

Electrical systems, including lights, signals, and the battery, should also be checked. Ensure that all lights are working properly, as visibility is crucial for safe driving, especially during long trips that may extend into nighttime. A weak or old battery can leave you stranded, so it's wise to have it tested and replaced if necessary.

Fluid levels, including coolant, transmission fluid, and power steering fluid, should be checked and topped off as needed. Low fluid levels can lead to overheating, transmission issues, and difficulty in steering, all of which can be dangerous during a trip.

Don't forget about the importance of alignment and suspension checks. Proper alignment ensures that your car drives straight and handles well, while a healthy suspension system provides a comfortable ride and better control over the vehicle.

Lastly, consider having a professional mechanic perform a comprehensive pre-trip inspection. They can identify potential issues that you might have overlooked and provide peace of mind knowing that your vehicle has been thoroughly checked by an expert.

In conclusion, scheduling preventative maintenance before a major trip is a crucial step in ensuring a safe and enjoyable journey. By taking the time to perform these checks and addressing any issues that arise, you can focus on the adventure ahead without the worry

of mechanical failures. Remember, a little preparation goes a long way in making your trip a memorable one for all the right reasons.

About All-terrain vehicle

An all-terrain vehicle (ATV), additionally referred to as a light energy vehicle (LUV), a quad bike or quad (if it has four wheels), as specified by the American National Criteria Institute (ANSI), is a vehicle that takes a trip on low-pressure tires, sits that is straddled by the operator, and has handlebars, similar to a motorbike. As the name indicates, it is developed to take care of a broader selection of surface than most other vehicles. It is street-legal in some nations, yet not in a lot of states, areas and provinces of Australia, the USA, and Canada. By the present ANSI interpretation, ATVs are meant for use by a single driver, however some ATVs, described as tandem ATVs, have been established for usage by the chauffeur and one guest. The motorcyclist rests on and runs these cars like a bike, but the added wheels provide even more security at slower rates. Although most are equipped with three or four wheels, 6 or 8 wheel (tracked) models exist and have existed historically for specialized applications. Multiple-user analogues with side-by-side seating are called energy terrain cars (UTVs) or side-by-sides to distinguish the courses of lorry. Both classes often tend to have comparable powertrain parts. Engine sizes of ATVs for sale in the United States since 2008 varied from 49 to 1,000 cc (3. 0 to 61 cu in).

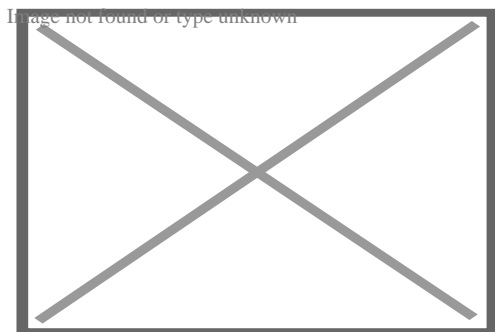
.

About Three-wheeler

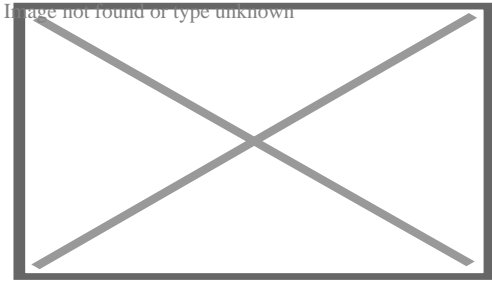
This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.



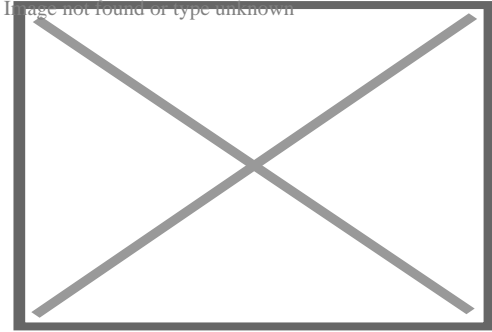
Find sources: "Three-wheeler" – news · newspapers · books · scholar · JSTOR (January 2012) (Learn how and when to remove this message)



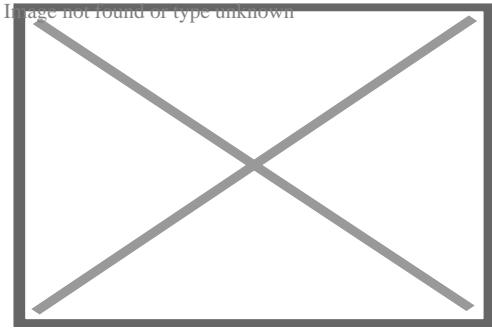
Campagna T-Rex



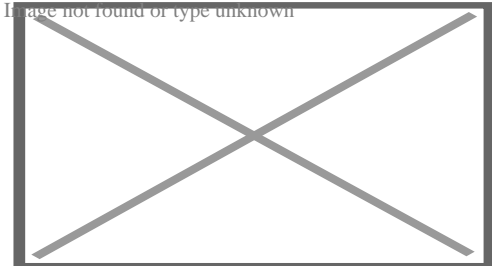
1932 Morgan Aero 2-Seater Sports



Fuldamobil three-wheeler (Postwar-era Germany)



Tricycle truck in Poland (Gorzów Wlkp)



Trihawk, a tadpole-type trike manufactured in California, United States during the 1980s

A **three-wheeler** is a vehicle with three wheels. Some are motorized tricycles, which may be legally classed as motorcycles, while others are tricycles without a motor, some of which are human-powered vehicles and animal-powered vehicles.

Overview

[edit]

Many three-wheelers which exist in the form of motorcycle-based machines are often called trikes and often have the front single wheel and mechanics similar to that of a motorcycle and the rear axle similar to that of a car. Often such vehicles are owner-constructed using a portion of a rear-engine, rear-drive Volkswagen Beetle in combination with a motorcycle front end. Other trikes include All-terrain vehicles that are specially constructed for off-road use.

Three-wheelers can have either one wheel at the back and two at the front (2F1R), (for example: Morgan Motor Company) or one wheel at the front and two at the back (1F2R) (such as the Reliant Robin). Due to better safety when braking, an increasingly popular form is the front-steering "tadpole" or "reverse trike" sometimes with front drive but usually with rear drive. A variant on the 'one at the front' layout was the Scott Sociable, which resembled a four-wheeler with a front wheel missing.^[1]

Three-wheelers, including some cyclecars, bubble cars and microcars, are built for economic and legal reasons: in the UK for tax advantages, or in the US to take advantage of lower safety regulations, being classed as motorcycles. As a result of their light construction and potential better streamlining, three-wheeled cars are usually less expensive to operate.^[citation needed]

Some inexpensive three-wheelers have been designed specifically to improve mobility for disabled people.^[2]

Three-wheeler transport vehicles known as auto rickshaws are a common means of public transportation in many countries in the world, and are an essential form of urban transport in many developing countries such as India and the Philippines.

History

[edit]

Early automotive pioneer Karl Benz developed a number of three-wheeled models.^[3] One of these, the Benz Patent Motorwagen,^[4] is regarded as the first purpose-built automobile. It was made in 1885.

In 1896, John Henry Knight showed a tri-car at The Great Exhibition.^[3]

In 1897, Edward Butler made the Butler Petrol Cycle, another three-wheeled car.

A Conti 6 hp Tri-car competed in (but did not complete) a 1907 Peking to Paris race sponsored by a French newspaper, *Le Matin*.^[5]

- 1885 Benz Patent Motorwagen

Image not found or type unknown

1885 Benz Patent
Motorwagen

- Goliath pickup truck at a meeting for vintage cars in the 1990s

Image not found or type unknown

Goliath pickup truck
at a meeting for
vintage cars in the
1990s

Davis D-2 Divan, at the National Automotive and Truck Museum, Auburn, Indiana, United States

○

Image not found or type unknown

Davis D-2 Divan, at
the National
Automotive and
Truck Museum,
Auburn, Indiana,
United States

Davis 494, at the National Automotive and Truck Museum, Auburn, Indiana, USA

○

Image not found or type unknown

Davis 494, at the
National Automotive
and Truck Museum,
Auburn, Indiana,
USA

Velorex was a manufacturing cooperative in Solnice, Czechoslovakia, formed in 1936 to satisfy

○

Image not found or type unknown

Velorex was a manufacturing cooperative in Solnice, Czechoslovakia, formed in 1936 to satisfy demand for small, inexpensive city cars.

Mazda T2000 truck 1957–1974, length 6.08 m, width 1.84 m, max speed 100 km/h

○

Image not found or type unknown

Mazda T2000 truck 1957–1974, length 6.08 m, width 1.84 m, max speed 100 km/h

An early Daihatsu Midget, which would serve as the basis for auto rickshaws that proliferate across

○

Image not found or type unknown

An early Daihatsu Midget, which would serve as the basis for auto rickshaws that proliferate across South and Southeast Asia

- Reliant Robin 3-wheeler car.

Image not found or type unknown

Reliant Robin 3-
wheeler car.
2016 Pembleton Supersports

-

Image not found or type unknown

2016 Pembleton
Supersports

Configurations

[edit]

Image not found or type unknown

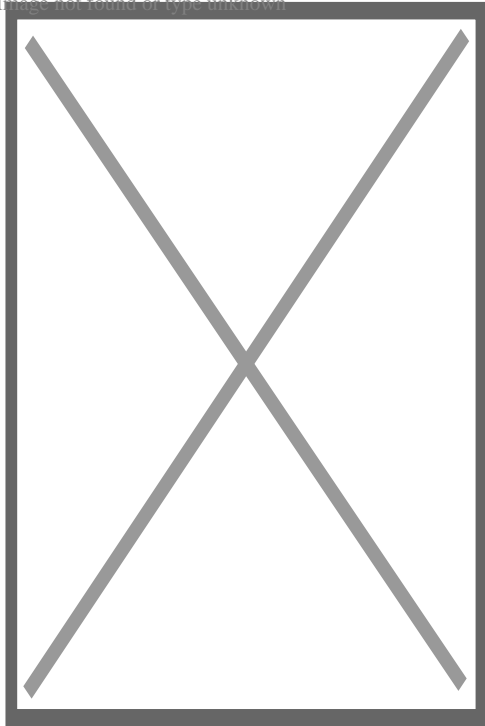


Diagram comparing delta and tadpole layouts

Two front

[edit]

A configuration of two wheels in the front and one wheel at the back presents two advantages: it has improved aerodynamics, and that it readily enables the use of a small lightweight motorcycle powerplant and rear wheel. This approach was used by the Messerschmitt KR200 and BMW Isetta. Alternatively, a more conventional front-engine, front wheel drive layout as is common in four-wheeled cars can be used, with subsequent advantages for transversal stability (the center of mass is further to the front) and traction (two driven wheels instead of one). Some vehicles have a front engine driving the single rear wheel, similar to the rear engine driving the rear wheel. The wheel must support acceleration loads as well as lateral forces when in a turn, and loss of traction can be a challenge.

A new tadpole configuration has been proposed with a rear engine driving the front wheels. This concept (Dragonfly Three Wheeler^[6]) claims both stability and traction (two driven wheels), as well as a unique driving experience.

With two wheels in the front (the "tadpole" form or "reverse trike") the vehicle is far more stable in braking turns, but remains more prone to overturning in normal turns compared to an equivalent four-wheeled vehicle, unless the center of mass is lower and/or further forward. Motorcycle-derived designs suffer from most of the weight being toward the rear of the vehicle.^[citation needed]

For lower wind resistance (which increases fuel efficiency), a teardrop shape is often used.^[citation needed] A teardrop is wide and round at the front, tapering at the back. The three-wheel configuration allows the two front wheels to create the wide round surface of the vehicle. The single rear wheel allows the vehicle to taper at the back. Examples include the Aptera (solar electric vehicle) and Myers Motors NmG.

Two rear

[edit]

Having one wheel in front and two in the rear for power reduces the cost of the steering mechanism but greatly decreases lateral stability when cornering while braking.

When the single wheel is in the front (the "delta" form, as in a child's pedal tricycle), the vehicle is inherently unstable in a braking turn, as the combined tipping forces at the center of mass from turning and braking can rapidly extend beyond the triangle formed by the contact patches of the wheels. This type, if not tipped, also has a greater tendency to spin out ("swap ends") when handled roughly.^[citation needed]

Lateral stability^[7]

[edit]

The disadvantage of a three-wheel configuration is that lateral stability is lower than with a four-wheeled vehicle.

With any vehicle, an imaginary line can be projected from the vehicles centre of mass to the ground, representing the force exerted on the vehicle by its mass. With the vehicle stationary, the line will be vertical. As the vehicle accelerates, that imaginary line tilts backward, remaining anchored to the centre of mass the point at which the line intersects the ground moves backward. As you brake it moves forward, with cornering it moves sideward. Should the point at which this line intersects the ground move outside of the boundary formed by connecting the tyre contact patches together (a rectangle for a four-wheeled car, or a triangle for a trike) then the vehicle will tip and eventually fall over. This is true for any vehicle.

With all vehicles it is critical that the vehicle should be engineered to slide before this point of instability is reached.

This can be achieved in several ways:

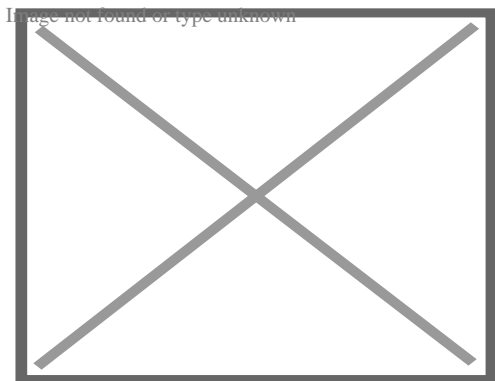
- by placing the center of mass closer to the ground
- by placing the center of mass closer to the axle with two wheels (for three wheelers)
- by increasing the track width
- by limiting the grip provided by the tyres, such that the vehicle loses adhesion before it starts to tip.
- By tilting some or all of the vehicle as it corners.

In the case of a three-wheeled ATV, tipping may be avoided by the rider leaning into turns.

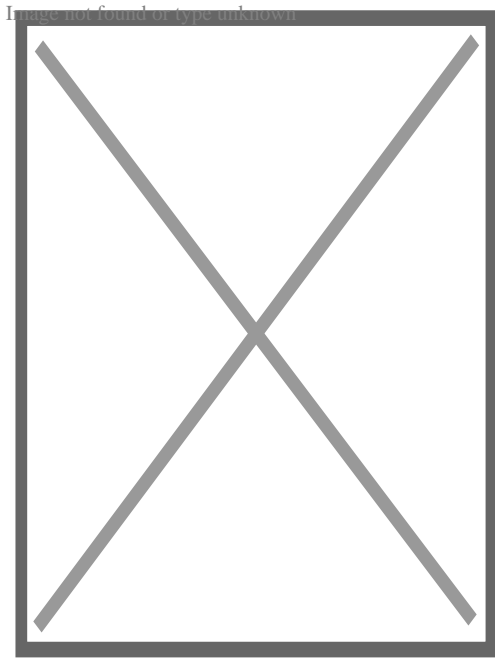
Tilting option

[edit]

Main article: Tilting three-wheeler



Tripendo recumbent tricycle, a tilting three-wheeler



Vandenbrink Carver

To improve stability some three-wheelers are designed to tilt while cornering like a motorcyclist would do. The tilt may be controlled manually, mechanically or by computer.

A tilting three-wheeler's body or wheels, or both, tilt in the direction of the turn. Such vehicles can corner safely even with a narrow track.

Some tilting three-wheelers could be considered to be forms of feet forward motorcycles or cabin motorcycles or both.

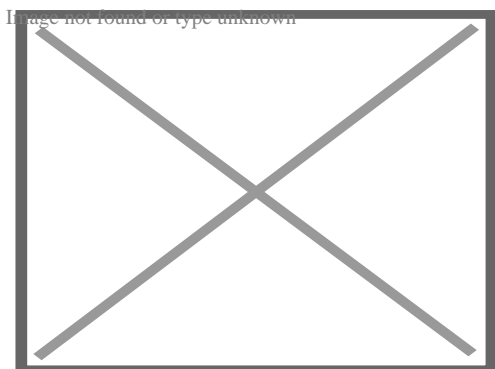
Electric three wheelers

[edit]

Main article: Electric vehicle. See also: Electric tricycle (disambiguation)

Battery-powered three wheelers

[edit]



Toyota i-Road, a three-wheeled battery powered personal mobility vehicle

Main articles: Battery electric vehicle and Electric rickshaw

Three-wheeled battery powered designs include:

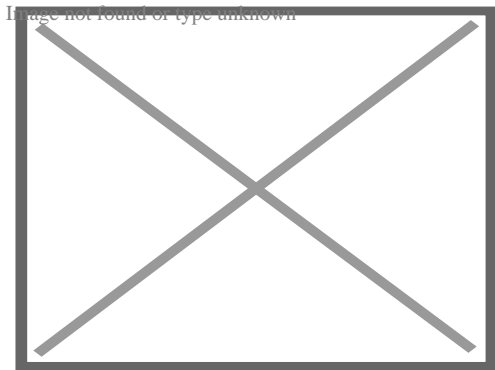
- Aptera (solar electric vehicle)
- Arcimoto
- CityEI
- Commuter Cars Tango
- Cree SAM
- ElectraMeccanica SOLO
- Myers Motors NmG (formerly Corbin Sparrow)
- Nobe GT100
- Toyota i-Road
- Triac
- Vanderhall Edison 2
- ZAP Xebra
- EWheels EW 36(mobility scooter)

Solar-powered three wheelers

[edit]

Main article: Solar vehicle

Here are three notable examples of solar-powered three wheelers; two race cars, the Infinium and the Sky Ace TIGA, and a vehicle planned for production, the Aptera.

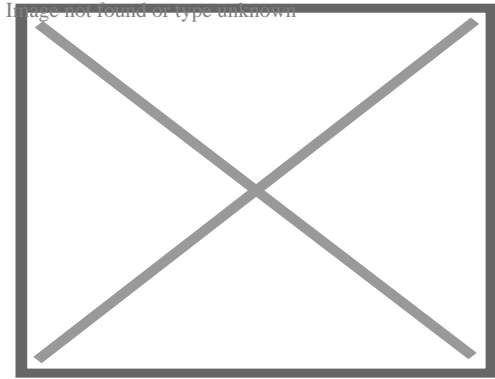


Infinium, winner of 2010 American Solar Challenge

The Infinium, built by the University of Michigan Solar Car Team, came in 3rd place in the 2009 World Solar Challenge held in Australia, and won the 2010 American Solar Challenge.

Ashiya University's Sky Ace TIGA achieved 91.332 kilometres per hour (56.751 mph) at Shimojishima Airport, in Miyakojima, Okinawa, Japan, to win the Guinness World Record, on

20 August 2014.^[8] It took the record from another three-wheeler, Sunswift IV, designed and built at the University of New South Wales in Australia,^[9] by a margin of almost 3 km/h.

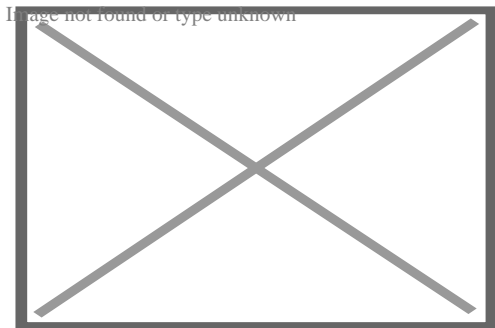


Solar panels on the hood, roof, dashboard and hatch of the Aptera EV

The Aptera solar electric vehicle^[10] uses a tadpole layout and is being designed to have a top speed of over 100 mph. The Aptera uses 42 KW in-wheel electric motors^[11] and can be ordered with two (front-wheel drive) or three (all-wheel drive) motors. The Aptera's roof and dashboard, and optionally its hood and hatch, are fitted with solar panels, with the full compliment being designed to add a range of up to 40 miles per day and 11,000 miles per year in the sunniest climates. First customer availability is planned for before the end of 2024.^[12]

Steam-powered three wheelers

[edit]



Cugnot's *fardier à vapeur*, as preserved at the Musée des Arts et Métiers, Paris, France

Main articles: Steam tricycle and Steamroller

The world's first full-size self-propelled land vehicle was a three-wheeler. French Army Captain Nicolas-Joseph Cugnot's 1770 *fardier à vapeur* (steam dray), a steam tricycle with a top speed of around 3 km/h (2 mph), was intended for hauling artillery.^[13]

Another of the earliest preserved examples is the Long steam tricycle, built by George A. Long around 1880 and patented in 1883,^[14]^[15] now on display at the Smithsonian Institution.

Wind-powered three wheelers

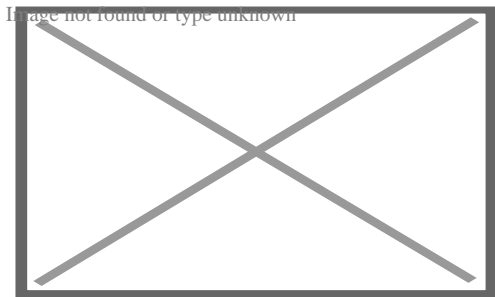
[edit]

The Whike is a recumbent tricycle with a sail, made in the Netherlands.

All-terrain vehicles

[edit]

Further information: All-terrain vehicle § Three-wheeled ATVs

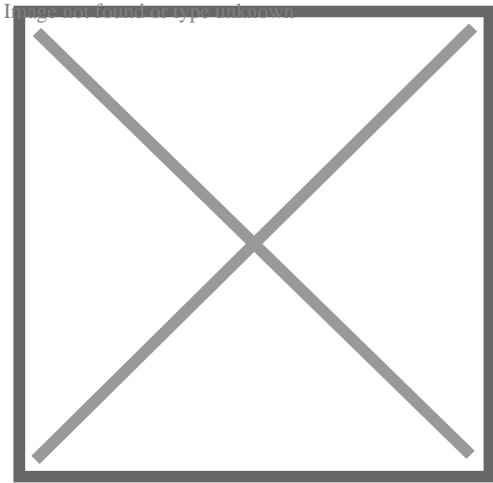


Honda, Suzuki and Yamaha all-terrain vehicles

Due to the incidence of injuries and deaths related to their use, a 10-year ban, entirely voluntary for manufacturers, was placed on the sale of new three-wheeled all-terrain vehicles in the United States in January 1988.^[*citation needed*] More injuries were sustained by riders by not applying a proper riding technique, and lack of wearing proper safety gear such as helmets and riding boots. In a search conducted by the Consumer Product Safety Commission, it was determined that "no inherent flaw was found in the three wheel design".^{[*citation*}

Registration

[edit]



Bond Bug at Silverstone

The examples and perspective in this section **may not represent a worldwide view** of the subject. You may improve this section, discuss the issue on the talk page, or create a new section, as appropriate. (October 2015) (*Learn how and when to remove this message*)

In the U.S, the National Highway Traffic Safety Administration defines and regulates three-wheeled vehicles as motorcycles.^[16] However, in 2015 a bill was introduced in Congress that would prevent some three wheeled vehicles from being classified as motorcycles in the United States, instead creating a new classification for "autocycles".^{[17][18]}

Driver's license and registration requirements vary on a state-by-state basis. Some states require drivers of three wheeled vehicles to have a motorcycle license and register the vehicle as a motorcycle. Some states, including Virginia, Kansas, and Indiana, classify some three wheeled vehicles as autocycles. Virginia defines an autocycle as "a three-wheeled motor vehicle that has a steering wheel and seating that does not require the operator to straddle or sit astride and is manufactured to comply with federal safety requirements for motorcycles."^[19] Indiana defines it as "a three (3) wheeled motor vehicle in which the operator and passenger ride in a completely or partially enclosed seating area that is equipped with:(1) a rollcage or roll hoops; (2) safety belts for each occupant; and (3) antilock brakes;and is designed to be controlled with a steering wheel and pedals."^[20] In other jurisdictions, such as British Columbia, Canada, and Connecticut, a three-wheeled vehicle with an enclosed passenger compartment or partially enclosed seat is considered an automobile.^[citation needed]

Examples

[edit]

Two front wheels

[edit]

Name	Country	Years manufactured	Comments
Léon Bollée Voiturette	France	1895–?	
TriPodCars ^[21] Tripod 1	Australia	2012–?	400 kg Reverse Trike, Bandit 1250, ZX14R (200+ hp) and EV
Berkeley Cars Berkeley T60	England	1959	
Egg	Switzerland	1896–99	
Advance 6 hp air-cooled Tri Car and 9 hp water-cooled Tri Car ^[22]	England	1902–12	
Humber Tricar ^[23] ^[24]	England	1904	
Riley Olympia Tricar ^[25]	England	1904	^[26]
Mars Carette ^[27]	England	1904–05	Mars Motors Co existed in Finchley, London, White and Poppe water-cooled engine, Single-cylinder, 3.3 kW
Lagonda Tricar ^[28]	England	1904–07	total production: 69 cars
Anglian	England	1905–07	
Armadale	England	1906–07	
Ranger Cub	England	1970–1980	Reverse Trike/Tadpole, A-Series engine 848-1275cc
Morgan V-Twin and F-Series	England	1911–39, 1932–52	Morgan Super Sports 2-Seater 1937
American Tri-Car	United States	1912	
Birmingham Small Arms Company Three Wheeler	England	1929–36	1100cc engine ^[29]
Zaschka	Germany	1929	Folding three-wheeler: Zaschka Three-wheeler 1929
Dymaxion car	United States	1933	Concept car designed by Buckminster Fuller
Mathis VEL 333	France	1946	3 seats, flat-twin front engine, aluminium body, production less than 10 units

Fend Flitzer	Germany	1948 - 1951	1 seat, Messerschmitt kabinenroller precursor, production about 250 units
1951 Hoffmann	Germany	1951	2 seats, aluminium body, engine mounted on the rear wheel steering pivot
Velorex Oskar and other models	Czechoslovakia	1951–71	Originally with leather bodies
Isetta	UK	1957–62	Three-wheeled version of the Isetta built in the UK to take advantage of tax and licensing regulations
Scootacar	UK	1957–64	
Messerschmitt KR175	Germany	1953–55	
Messerschmitt KR200	Germany	1955–64	
Peel P50	Isle of Man	1963–64	Smallest production car ever built
HM Vehicles Free-way	United States	1979–82	
Campagna T-Rex	Canada	1996–present	
Malone Car Company F1000 Skunk SS TAZR	United Kingdom	1999–present	High-power internal combustion and pure electric versions released November 2010
Cree SAM	Switzerland	2001	Electric, only 80 produced
Myers Motors NmG ("No more Gas")	United States	2006–present	Single-occupant all-electric plug-in
BRP Can-Am Spyder Roadster	Canada	2007–present	The Can-Am Spyder is a three-wheeled motorcycle manufactured by Bombardier Recreational Products.
Can-Am Spyder Roadster			
Brudeli 645L	Norway	2008–	
Moonbeam	United States	2008–present	100 mpg DIY, fabric-covered car based on parts from two Honda 150cc motorscooters ^[30]
Triac	United States	2009–2011	Electric, never entered production
XR-3 Hybrid	United States	Plans–2008, Kit–2009	Front 3-cylinder diesel (125 mpg), rear electric 40 mile range (220 mpg when used as a hybrid) ^[31]
Aptera (solar electric vehicle)	United States	2022 planned	Solar-powered Electric

Triton Trike	United States	2000–present	Gas-powered, 42+ mpg, front-wheel drive, custom builds and kits available
Nobe GT100	Estonia & United States	2021 planned	Electric, powered at all 3 wheels
Polaris Slingshot	United States	2015–present	
Vanderhall Laguna Roadster	United States	2016–2018	Exotic Auto-cycle, mono-aluminum chassis, carbon fiber body, 200 HP, 1550 pounds dry weight, side-by-side seating, fwd. 1.4 liter turbo GM power plant. 6 speed Automatic with paddle shift option. Manufactured by Vanderhall Motor Works in Provo, Utah U.S.A
Vanderhall Venice	United States	2017–present	The mainstay of the Vanderhall line up, the Venice brings the soul of roadster motoring while extending effortless performance in kind. ^[32]
Vanderhall Carmel	United States	2020–present	The Vanderhall Carmel brings more luxury and convenience to the Carmel lineup. With provisions to accommodate a removable capshade, the Carmel promises additional class and comfort for your journey. ^[33]
Vanderhall Edison	United States	2020–present	The Edison2: A fully electric roadster that combines refined and eye-catching design while maintaining classic, elegant lines. Unplug and play has been redefined ^[34]
Elio Motors	Shreveport, LA, United States	Awaiting funding	Two passenger fully enclosed cockpit with car controls
Girfalco Azkarra	Canada	2017	All-electric two-passenger three-wheeled vehicle, possibly the quickest three-wheeler
Go3Wheeler	United States	2014	single person three wheeler
Corbin Sparrow			
Piaggio MP3			
Tri-Magnum	United States		Tilting 3-wheeler capable of seating two people. ^[35]
Volkswagen GX3			

Morgan 3-Wheeler	England	2012–present	The power train is a 1983cc ‘V-twin’ fuel injected engine mated to a Mazda 5 speed (and reverse) gearbox
Fuel Vapours Alé	Canada	2005–present	Prototype. Gets 92 mpg.
Arcimoto FUV	United States	2019–present	Two passenger all-electric, 102 mile range City
Fiberfab Scarab STM	United States	1976	Kit car with canopy door manufactured by Fiberfab
Bricklin 3EV	United States	Planned	Two passenger electric vehicle from Malcolm Bricklin. ^[36]

Two rear wheels

[edit]

Name	Country	Years manufactured	Comments
Apino	Brazil	unknown	Mini Truck
Benz Patent Motorwagen	Germany	1886–93	
Eco-Fueller	USA	2009–2011	2 seater built in Oregon. ^[37]
La Va Bon Train	France	1904–10	50–100 believed built
Davis D-2 Divan	United States	1947–48	about 13–17 built, including the 494, a Jeep-like military vehicle ^[38]
Scammell Scarab	England	1948–67	
Autoette	United States	1948–70	
Daihatsu Bee	Japan	1951–1952	
Daihatsu Midget	Japan	1957–72	
Mazda T-2000	Japan	1957–74	
Mazda K360	Japan	1959–69	
Mazda T600	Japan	1959–71	
Kia K-360	South Korea	1962–1973	Kia's first truck (OEM Mazda K-360)
Kia T-1500	South Korea	1963–?	1484 cc, 60 hp, four cylinder and a maximum load of 1.5 tons. (OEM Mazda T-1500)
Kia T-600	South Korea	1969–1974	577cc, 20 HP and 500 kg load. Top speed of 75 km/h. 7726 produced (OEM Mazda T-600)

Kia T-2000	South Korea	1967–1981	1985 cc, 81 hp, four cylinder and a maximum load of 2 tons. 15952 produced (OEM Mazda T-2000)
Piaggio Ape	Italy	1948–present	
Electra-King	United States	1964?–1980s?	Two-seater electric car ^[39]
Bond 875	England	1965–70	
Bond Bug	England	1970–74	
Reliant Robin	England	1973–81, 1989–2002	
Reliant Regal	England	1953–1973	An example of this vehicle is the iconic van belonging to Del Boy and Rodney Trotter in the long-running BBC sitcom Only Fools and Horses, though it is often incorrectly referred to as a Reliant Robin.
GM Lean Machine ^{[40][41]}	United States	1980s	Tilt, concept car ^[42]
TriVette	United States	1974–1976	
Twike	Germany	1995–present	Electric-human-power hybrid, developed in Switzerland
ZAP Xebra	United States	2006–2009	electric power
eTuk	United States	2014–	re-designed tuk tuk for the US Market, including an all-electric motor ^[43]
Snyder ST600-c	United States	2011–2012	Imported by Snyder Technologies / Wildfire Motors, this is a rebrand of the Fulu Motors ?????, Fulu Jinjunma in English. Referred to as the 09 golden horse internally.
Carver CityEl CLEVER	Netherlands Denmark	2007–2009	Tilt Mini-El, City-El
Harley-Davidson Servi-Car	United States	1932-1973 ^[44]	
Harley-Davidson Tri Glide	United States	since 2009	

See also

[edit]

- Four-wheeler

References

[edit]

- [^] "Scott Sociable". Retrieved 2015-10-05.
- [^] *Sta?ko-Paj?k, K; Bursa, B; Se?ko, J; Detka, T; Korczak, S; Nowak, R; Popio?ek, K; Lisiecki, J; Paczkowski, A (2022-07-01). "A three-wheeled vehicle for the disabled people". IOP Conference Series: Materials Science and Engineering. **1247** (1): 012039. Bibcode:2022MS&E.1247a2039S. doi:10.1088/1757-899X/1247/1/012039. ISSN 1757-8981. S2CID 250504234.*
- [^] **a b** Elvis Payne (2012). "The History of the 3-Wheeled Vehicle". 3-wheelers.com. Retrieved 2012-01-03.
- [^] Chris Chong (July 2, 2006). "History in its magnificence". star-motoring.com. Archived from the original on 2007-10-24. Retrieved 2008-01-20.
- [^] "History". pekingparisraid.co.uk. Archived from the original on 2007-08-26. Retrieved 2008-01-20.
- [^] Design. "Dragonfly three wheeler". www.dragonflythreewheeler.com. Retrieved 2021-06-09.
- [^] Riley, Robert Q. "The Dynamic Stability of Three-Wheeled Vehicles in Automotive-Type Applications". Robert Q. Riley Enterprises. Archived from the original on 2020-09-22.
- [^] "Fastest solar-powered vehicle". Guinness World Records.
- [^] "Aussie car breaks a world speed record". AAP. 7 January 2011. Retrieved 2011-01-07.
- [^] Voelcker, John (2019-08-28). "Exclusive: 3-Wheeled Aptera Reboots as World's Most Efficient Electric Car". IEEE Spectrum. IEEE. Retrieved 2020-01-20.
- [^] "Aptera solar EV Launch Edition: 400-mile range, no Supercharging yet". Green Car Reports. 2023-01-22. Retrieved 2023-03-18.
- [^] Chris (2023-01-27). "Aptera Announces Accelerator Program to Kick Off Production Plan". Aptera. Retrieved 2023-02-24.
- [^] "Fardier de Cugnot". Archived from the original on July 16, 2013.
- [^] "1880 Long Steam Tricycle - Pictures". Remarkablecars.com. 2009-06-17. Retrieved 2010-07-29.[dead link]
- [^] "America on the Move | Long steam tricycle". Americanhistory.si.edu. 2008-10-24. Retrieved 2014-06-17.
- [^] "Highway Safety - Title 23, United States Code, Chapter 4 and Related Highway Safety Provisions" (PDF). December 2008. Archived from the original (PDF) on

September 26, 2006. Retrieved 2015-10-05.

17. ^ "Newly Introduced Federal Legislation Would Ensure That Three-Wheeled Automobiles Are Not Classified As Motorcycles". *Motorcycle Law Group*. Retrieved 26 April 2017.
18. ^ "S.685 - Autocycle Safety Act". *Congress*. 10 March 2015. Retrieved 26 April 2017.
19. ^ Va. Code Ann. § 46.2-100 (West)
20. ^ Ind. Code Ann. § 9-13-2-6.1 (West)
21. ^ "Tri Pod Cars".
22. ^ "Advance Fore-Cars and Tri-Cars". *oakingtonplane.co.uk*. Archived from the original on 2008-01-12. Retrieved 2008-01-23.
23. ^ "British Motor Manufacturers (1894-1960) Humber". *britishmm.co.uk*. Archived from the original on February 21, 2009. Retrieved 2008-01-20.
24. ^ "Humber History". *histomobile.com*. Archived from the original on June 8, 2007. Retrieved 2008-01-20.
25. ^ "Rileys 1896 - 1939 The Pre-Nuffield Years". *Rob's Riley Pages (ukonline.co.uk/rileyrob)*. Archived from the original on March 21, 2005. Retrieved 2008-01-20.
26. ^ illustration Archived December 29, 2010, at the Wayback Machine
27. ^ "1904 Mars Carette - Franschhoek Motor Museum". 20 October 2017. Retrieved 2020-11-24.
28. ^ "The History of Classic Cars: 1905 Lagonda Tricar". *autoclassic.com*. Retrieved 2008-01-20.
29. ^ Peter Bowler, president The BSAFWD Club. "image and description". *Bsafwdc.co.uk*. Archived from the original on 2012-02-05. Retrieved 2012-04-09.
30. ^ Wilson, Mark (2006-09-24). "Moonbeam: 100mpg Homemade Car". *Gizmodo.com*. Retrieved 2015-10-05.
31. ^ "XR3 Hybrid Personal Transit Vehicle: A 125 mpg Plug-In Hybrid Three Wheeler You Build From Plans". *Rqriley.com*. Retrieved 2012-04-09.
32. ^ "Venice". *Vanderhall Motor Works*. Retrieved 2020-09-18.
33. ^ "Carmel". *Vanderhall Motor Works*. Retrieved 2020-09-18.
34. ^ "Edison 2". *Vanderhall Motor Works*. Retrieved 2020-09-18.
35. ^ "Project 32: A High-Performance Tilting Three-Wheel Vehicle". *www.rqriley.com*. Archived from the original on 15 January 2006. Retrieved 19 April 2022.
36. ^ "Meet The Bricklin 3EV". *www.vvcars.com*.
37. ^ "Eco-Fueller". *www.eco-fueller.com*. Archived from the original on 7 February 2011. Retrieved 19 April 2022.
38. ^ Patton, Phil (September 24, 2009). "A Dreamer's Machine, More Promise Than Reality". *The New York Times* – via *NYTimes.com*.
39. ^ Rob & Sharon McLellan. "advertising brochure". *Mclellansautomotive.com*. Retrieved 2012-04-09.
40. ^ "General Motors Three Wheeled Cars". *GM's Lean Machine (3-wheelers.com/gmlean)*. Retrieved 2008-04-08.

- 41. ^ *"Lean Machines: Preliminary Investigation" (PDF). Institute of Transportation Studies, University of California at Berkeley (commutercars.com/downloads/studies/). Retrieved 2008-04-08.*
- 42. ^ *"illustration". Retrieved 2012-04-09.*
- 43. ^ *"eTuk USA". Retrieved 2014-07-01.*
- 44. ^ *"Remembering the 1937 Harley-Davidson Servi-Car GE". March 2022.*

External links

[edit]

- Complete A-Z list of three-wheelers since 1940

About Shorewood Home & Auto (Formerly Circle Tractor)

Driving Directions in Will County

polaris atv ultimate series- ready pack

41.608177048358, -87.952142513859

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

used atv mowers for sale

41.606342917118, -87.909382977642

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

atv for sale illinois

41.61894596793, -87.9730747233

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

polaris atv ultimate series- ready pack

41.588263444146, -87.97398929193

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

atv push mower

41.619926653045, -87.892455610928

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

atv illinois for sale

41.661417333599, -87.915319377447

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

ATV Repair

41.608363577474, -87.913026040309

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[**Open in Google Maps**](#)

honda atv dealers in illinois

41.589248669717, -88.005034547215

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

atv stores in illinois

41.651026502851, -87.947342550038

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

used atv mowers for sale

41.579276774696, -87.956507786578

Starting Point

Shorewood Home & Auto (Formerly Circle Tractor), 13639 W 159th St, Homer Glen, IL 60491, USA

Destination

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.579276774696,-87.956507786578,15z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d-87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.579276774696,-87.956507786578,15z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d-87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.587.97398929193,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.587.97398929193,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.688.014239682709,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.688.014239682709,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.688.024051861695,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.688.024051861695,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.687.953537224626,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.687.953537224626,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.687.989335447653,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.687.989335447653,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.587.928742225499,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.587.887582235395,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/place/Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29/@41.687.913026040309,25.2z/data=!4m6!3m5!1s0x880e41f2e579f223:0xe5c5c23b2b8dc77a!8m2!3d41.598588!4d87.9510205!16s%2F>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.608177048358,-87.952142513859&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363+ready+pack>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.576559514074,-88.017102969337&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>

Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.549407525434,-87.887582235395&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>
Click below to open this location on Google Maps
[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.541190499135,-87.908518836185&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>
Click below to open this location on Google Maps
[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.626159693619,-87.898319615671&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>
Click below to open this location on Google Maps
[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.627237385081,-87.894169372291&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>
Click below to open this location on Google Maps
[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.579276774696,-87.956507786578&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>
Click below to open this location on Google Maps
[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.589248669717,-88.005034547215&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+1363>
Click below to open this location on Google Maps
[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.545276661987,-87.96486613091&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+13639>
Click below to open this location on Google Maps

[Open in Google Maps](#)

Google Maps Location

<https://www.google.com/maps/dir/?api=1&origin=41.575715082595,-87.911896967961&destination=Shorewood+Home+%26+Auto+%28Formerly+Circle+Tractor%29%2C+13639>
Click below to open this location on Google Maps

[Open in Google Maps](#)

Shorewood Home & Auto

Phone : +17083010222

Email : +17083010222

City : Shorewood

State : IL

Zip : 60404

Address : 1002 W Jefferson St

Google Business Profile

Company Website : <https://www.shorewoodhomeandauto.com/>

USEFUL LINKS

[ATV Dealer](#)

[ATV Repair](#)

[Sitemap](#)

[Privacy Policy](#)

[About Us](#)

Follow us