Dynamic Motions Platform
Wheel Alternative

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Why ?

Beyond the Rubber: Why We Need a Tire Revolution

Our reliance on rubber tires takes a toll on the environment. From the production process to disposal, the traditional tire industry raises concerns. But it's not just the rubber; the asphalt it rolls on also contributes to environmental issues.

The Rubber Downside:

Natural rubber production involves deforestation, impacting biodiversity and soil health. Synthetic alternatives aren't much better, relying on fossil fuels and generating toxic byproducts. Additionally, worn tires shed microplastics, polluting our waterways and ecosystems.

The Asphalt Maze:

Asphalt production releases harmful emissions and often utilizes materials like petroleum byproducts. It also acts as a barrier, preventing rainwater from naturally replenishing groundwater stores (aquifers).

The Disposal Dilemma:

Used tires pose a significant waste management challenge. Burning them releases toxic fumes, and recycling capabilities are limited. Stockpiles of used tires not only take up valuable space but also create potential fire hazards.

The Path to Progress:

Developing alternatives to rubber tires and asphalt is crucial. Imagine a future where our roads and vehicles leave a lighter footprint. Here's what a new approach could offer:

- **Reduced Environmental Impact:** Sustainable materials for tires and permeable road surfaces could minimize environmental damage during production, use, and disposal.
- **Improved Efficiency:** Lighter, more innovative tires could lead to better fuel efficiency for vehicles, reducing overall emissions.
- **Reduced Waste:** New materials and designs could lead to tires that are easier to recycle or even biodegrade, minimizing waste buildup.

The Need for Innovation:

The traditional tire and asphalt combination has served us well, but it's time to explore alternatives. By investing in research and development, we can create a future where our transportation infrastructure is sustainable and environmentally friendly. This shift will require collaboration between scientists, engineers, and policymakers.

The journey beyond rubber tires and asphalt paves the way for a cleaner future. Let's embrace innovation and roll towards a more sustainable transportation landscape.

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The Problems

Highlights some potential limitations of traditional wheels. Here's a look at the cons:

Maintenance: Regular maintenance is essential for traditional wheels. Punctures require repairs or replacements, adding costs and downtime. Worn tires compromise safety and handling.

Safety and damages: punctures may lead to sudden deflation in the tires, and constitute a safety risk. Even minor damage can cause vibrations and affect vehicle control.

Impact on the environment: The production and disposal of rubber raises environmental concerns. Tire wear produces microplastics that pollute the environment.

Weight and efficiency: traditional wheels contribute to the overall weight of the vehicle. This heavyweight can reduce fuel efficiency and performance.

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The Challenges

In order to produce a platform that knows how to change situations according to the need, you have to take into account that the more moving parts there are, the more room there is for malfunctions. The second need was to produce a system as cheap as possible. system for an existing user

It was important to produce a system that would not require abnormal maintenance by maintaining the engine brakes or other systems in the vehicle and the wheel would turn from a malfunctioning product to a maintained product

The price to the end customer for purchase and maintenance should be financially viable for the buyer.

The design included the use of materials that are less harmful to the environment and are 100 percent recyclable.

Any change in the radius of the circle would create gaps between the surfaces that vibrate the ride. In order to produce a comfortable driving sensation even when the radius of the circle changes, a special design was needed that did solve this problem.

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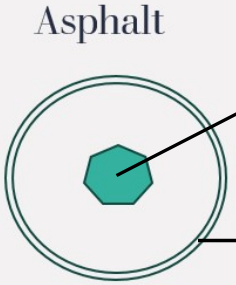
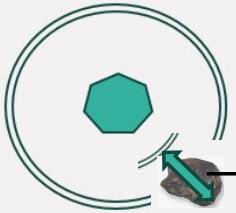
A solution for traveling on paved roads and dirt roads.



Complete adaptation to the "after market", the standards can be replaced in the customer's vehicle

The bearing surface is covered with a layer of rubber - unlike the unreliable vulcanization method, wrapping the surface on all sides will prevent the movement of the coating and its disintegration, the coating will be resistant to normal wear and tear.



Ability to pass over obstacles while traveling that could cause a normal tire to tear(rocks, nails, etc.), the movement is springy by itself of about 60% of the weight on the same point.

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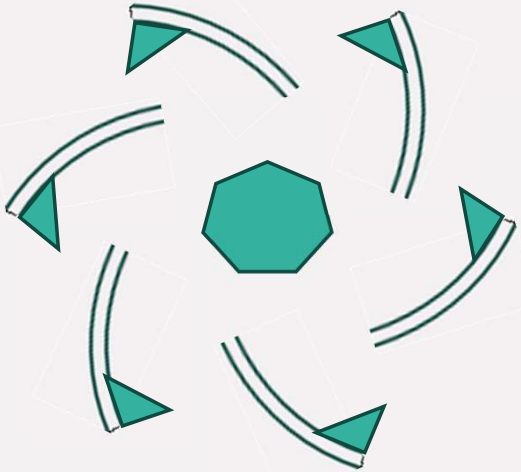
Climbing, rocks



the direction of travel

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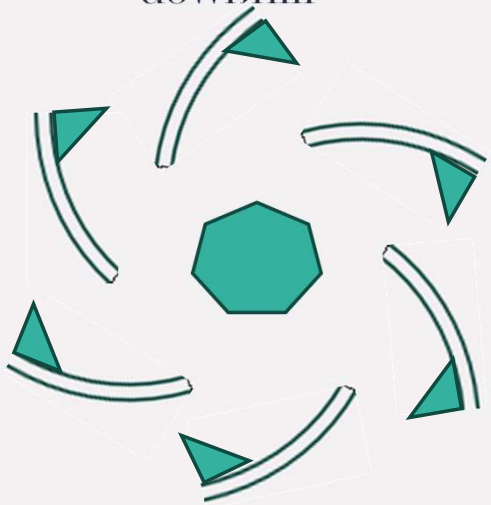
Mud, sand, downhill



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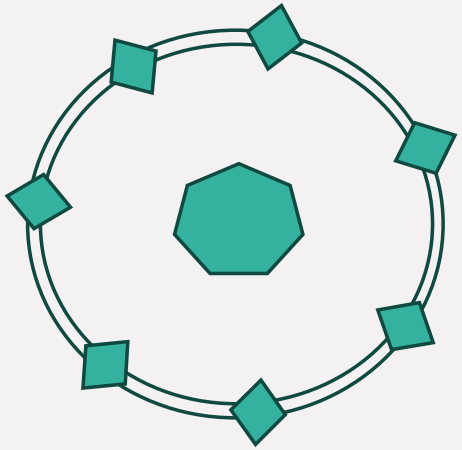
Ice- Mode



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Operations

Operation and change of modes by the driver using internal pneumatics in the unit.

Benefits and maintenance

Half the weight of a standard tire.

No need to check air pressure.

Checked as a routine in the annual vehicle test. If necessary, only a damaged component will be replaced, not the entire unit.

Prevents the necessity of building asphalt roads that contribute to warming the earth and prevent rainwater from seeping into the aquifer.

Business

The initial market is the vehicle that does not drive on a paved road for the reason that the regulation is easier and therefore it will also be possible to do business from the first stages.

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Strengths of Off-Road Vehicles:

Reduced regulation: SUVs generally encounter less stringent regulations than traditional road vehicles. This can streamline the development process.
Potential benefits:
Weight: Lighter weight can improve fuel efficiency and maneuverability.
Cost: Lower costs.
Maintenance: ongoing annual maintenance.
Durability: SUVs are usually built for harsh conditions, which can lead to a longer lifespan.
Offensive ability of a mountain goat.
Ecological impact: lighter weight and less weight in the use of rubber.
Execution Phase:

3D Draft: Having a finished 3D draft based on Polaris measurements.
Engineering: Absolutely crucial. Load calculations, stress analysis, and material selection are essential for a functional and safe vehicle.
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