



VAAST FAQ

BRAND

What is VAAST and how is it different?

VAAST is a human transportation company building an all-new, all-road brand of Sport Performance Bikes designed for those who seek soul-fulfilling adventures, journeys and escapes. Bikes expressly designed for those who are destined for more. VAAST is different than other brands in our pursuit of supporting a vibrant cycling ecology, focus on environmental sustainability and the use of new material technology.

What is Sport Performance?

Sports Performance is a doctrine born out of a racing pedigree, thoughtfully reconceived for the adventurer and focused on pursuing all-new levels of exploration, endurance, and performance in a world beyond finish lines. VAAST is all about adventure and exploration. We are not about racing although you are more than welcome to race on our bikes.

What is United Wheels and how does VAAST fit in?

United Wheels Company Limited is the parent company to VAAST, as well as ALLITE, Batch Bicycles, Buzz E-Bikes, Niner Bikes, and Royce Union. Combined, the brands sell more than 5 million bicycles through e-commerce, independent dealers, distributors and thousands of retail locations throughout the U.S. and over 40 countries, addressing riders at every stage of life and every level of experience.

What is VAAST doing to be more environmentally friendly?

We strive to be a leading example for a global community whose mission is the preservation and long-term resilience of our natural habitats. We stand behind those who wish to create a stronger, everlasting bond with their surroundings, and we are committed to operating in a way that will have a significant positive impact on those efforts. When you ride a VAAST Bike, you show your support for a vibrant cycling ecology and respect for the epic experiences we can find in nature. VAAST Bikes are members of Green America, Green Business Bureau and B Corp and we choose sustainability in every link of the value chain.

TECHNOLOGY

What is ALLITE® Super Magnesium™?

Weighing 30% less than aluminum by volume and being both stronger and stiffer pound for pound, Allite Super Magnesium has incredible potential in applications, where weight, performance and efficiency are critical. The ALLITE® Super Magnesium™ alloys are lightweight





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and high-strength with excellent shock absorption properties, good electromagnetic shielding performance, good heat dissipation and recyclability.

What is AE81?

AE81 is the name of the proprietary ALLITE® Super Magnesium™ alloy containing 8% Aluminum and 1% Rare Earth elements. AE81 is designed specifically for application where weldability is a priority in combination with excellent strength and good elongation.

Why is Super Magnesium more environmentally friendly than other metals?

Considered to be the most eco-friendly and sustainable metal in the world, Magnesium is 100% recyclable, dissolves naturally leaving no trace, and has widespread natural occurrence with unlimited reserves. When VAAST Bicycles use ALLITE® Super Magnesium™ in our products and components, we fulfill our commitment to designing better performing, more accessible, more sustainable earth-friendly materials, and help to set the stage for a stronger, more sustainable, and vibrant cycling world.

What is PEO?

Plasma Electrolytic Oxidation (PEO) is a bath-based method of producing ceramic layers on the surface of light alloys. PEO surface coatings are characterized by their wear resistance, corrosion resistance, and thermal and chemical stability. A carefully tailored and proprietary PEO technology produces hard and dense ceramic coatings that are optimized to provide a combination of important properties and benefits.

The VAAST frames are treated with PEO in order to provide the most durable coating possible, harder and more abrasive resistant than an anodized surface. It is a ceramic surface and you really need to take a hard metal tool to the surface of PEO repeatedly in order to penetrate the coating. It will practically never happen during normal use of a bicycle.

We have done extensive testing of corrosion in both salt spray lab tests as well as real world riding conditions. We have on multiple test bikes had exposed magnesium and we even have one of our riders use raw mag handlebars on their indoor ride bike to test the results of sweat and humidity.

If we for a second imagine that penetrating the PEO does happen, the magnesium underneath will oxidize, not corrode as the part of the frame is not in contact with any other metals. Oxidation will show as a white/grey film over time, small impurities on the raw metal surface. It will not impact the construction or the strength of the alloy.

Galvanic corrosion happens when you have direct contact between bare magnesium and a

dissimilar metal like steel. This would only happen on a bicycle if you are using steel bolts in threaded holes where there is no PEO or other surface coating.

It is important to mention that the magnesium used in the VAAST frames are Allite SuperMagnesium which are less prone to oxidize or corrode, but the key really lies in the PEO coating to ensure the longevity and durability that you need in an outdoor product.

What is the difference between PEO and Anodizing?

Anodizing – the process of electrolytic oxidation without the use of plasma - has been the prevalent technique over many years. The introduction of plasma fundamentally alters coating and performance characteristics in stressful end-use applications.

The use of plasma introduces several benefits:

1. Development of harder ceramic phases (including crystallisation).
2. Chemical passivity - most PEO ceramics are chemically inert.
3. Incorporation of elements from the electrolyte into the ceramic to give different properties.
4. Reduced stiffness gives high adhesion under mechanical strain or thermal cycling.
5. Crack-free edges.

The high adhesion and chemically inert properties provide excellent base or primer for secondary surface treatment such as paint or plastic coating.

Surface coatings formed through plasma electrolytic oxidation can offer 2-4x more hardness than hard anodizing and provide increased wear resistance.

I had a set of old magnesium rims on my car and they corroded, how is this new magnesium different?

The main disadvantage of vintage cast magnesium wheels was their low corrosion resistance. Since then scientists and engineers have investigated the superior characteristics of magnesium to find a solution to the problem. Today, new magnesium surface treatment technologies have completely resolved the issue, allowing manufacturers to provide extended warranties on magnesium wheels (up to 10 years in some cases). As an example, in 2014/2015 60% of buyers of Porsche 918 Spyder have opted for the forged magnesium wheels package.

PRODUCT

How does the VAAST frames dampen vibration from the road?

Damping capacity is the ability of a material to dissipate vibrational energy. Typically, the material will absorb energy by converting mechanical energy into heat. Magnesium alloy's structures are close-packed hexagonal grains, so there are long dislocations inside the material. Under vibration



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load, the dislocations will oscillate and thus consume large amounts of energy. The rare earth elements in SuperMag™ limit the growth of grains during the solidification process and extrusion process, resulting in smaller and more refined grains compared to other magnesium alloys. The grain boundary area inside the material is increased and the microscopic viscous motion of the grain boundary generates a large internal friction consumption which absorbs large shock loads.

Do all models (A / M / U / Y) share frames to accommodate the different wheel sizes?

Yes, this is part of the versatility of the brand and each model. The A / M / U models share the same frame to accommodate the two-wheel sizes, we specifically designed the geometry to offer flexibility for commonly available wheel sizes for different terrain and riding styles. Y series geometry is the exception and we optimized the geometry to fit specific younger riders and the geometry couldn't be shared.

What is V-Fit and how does this differ from other brands fit?

V-fit is focused on putting the rider in the optimal sports performance posture. When designing the bikes, we look at more than just the frame geometry to create a riding posture that is more attuned to an enhanced feel, reactive steering control, and responsive climbing ability. We use TrueStack™ and TrueReach™ to determine the optimal sports performance fit.

Are the replaceable derailleur hangers specific to each model?

Across the VAAST range there are only two derailleur hangers: There is a thru axle hanger that fits both A and M series models and a QR hanger that fits both U and Y models. All hangers are marked with a model number, so if you need a replacement part it is easy to identify which.

Are all the VAAST bikes 1X drivetrain?

Yes, all the VAAST models are designed for 1X drivetrain specifically. Modern 1X drivetrains are lighter, more efficient and provides the same range as heavier 2X configurations with a more durable and intuitive setup.

What is the story behind the colors and graphics of the bikes?

We believe adventure, and inspiration is found wherever you seek it. Our brand represents boundless exploration in any environment. From the mountains to the prairies to the urban jungle. From tarmac to the road to the steep single-track, we make you feel at home and in your element. Our brand mark depicts movement on roads and trails and evokes tales of riding



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adventure. And our first-generation color palette takes inspiration from the diverse landscapes that inspired the bikes themselves.

When will the bikes be available?

Our bikes are currently in production and will be available across bike shops globally by March 2020.

Why does the A/1 frame have a dropped chain stay?

The dropped chain stay (CS) allows the CS to be placed lower in reference to the chainring and creates more clearance for wider tires.

What is the tire clearance for all your models?

A/1 700c = 42mm

A/1 650b = 50mm

M/1 29" = 2.6"

M/1 27.5" = 2.8"

U/1 700c = 40mm

U/1 650b = 50mm

Y/1 24" = 2.4"

Y/1 20" = 2.3"

Will you offer framesets?

Yes, we will offer our A/1 and M/1 as framesets. The A/1 frameset will retail for \$1,299 USD and the M/1 frameset will retail for \$899 USD.

A/1 frameset includes: frame, fork, F/R thru axles, headset, seat clamp and hardware

M/1 frameset includes: frame, R thru axle, headset, seat clamp and hardware



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What is your relationship Niner/Batch Bicycles?

VAAST and Niner are both owned by United Wheels, but they are separate brands and independent of each other.

I am a Niner/Batch dealer, can I carry VAAST?

Yes, we believe the two brands complement each other well and as a trusted, authorized Niner partner in good standing you would be first in line to carry VAAST in your region.

Do you have dealers in EU?

VAAST is a start-up brand that is launching at Eurobike with the goal of getting dealers to carry our product. We have inventory available through our warehouse in Holland and will be able to ship to retail locations in November.

Do you have any international distributors?

VAAST is a start-up brand that is launching at Eurobike with the goal of partnering with international distributors across the world to carry our product. We have inventory available for shipment from Taiwan from November.

Where can people find more information about VAAST?

For more information about VAAST Bikes, visit www.vaastbikes.com, "like" VAAST Bikes on Facebook or follow @VAASTBikes on Instagram to receive the latest news and updates.

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