

Those who ride know

# Ellsworth

HAND CRAFTED BICYCLES, INC.



x.x.x.9

## X<sup>3</sup> Aluminum Alloy Rogue Rims Downhill/Freeride Wheels

It takes a lot to earn the namesake of our freeride machine and it is something we do not take lightly. Like its huckster counterpart, these rims live for Extreme Freeriding and Down Hill Racing.

The only wheels worthy of running on our Rogue or Dare, their bombproof design features a 32mm Spherical, eyeleted, taper wall rim with 32 Quad Butted spokes that are 3 cross laced. Ellsworth created an out of bounds wheel that rolls and tracks through the worst conditions like no other in its class. And with more spokes at less weight and a versatile axle system that is built for the most harrowing conditions, you can trust these wheels will get you anywhere you want to go FAST.

### Axle Configurations:

- Front—QR, 15mm QR and 20mm thru axle
- Rear—QR, 12mm bolted and Syntace x12 QR

Actual Weight 2,095 grams



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## Wisdom is in our Designs

Magic is in applied Wisdom. Wisdom is knowledge put to good use. For optimum efficiency, wheels must be designed to resist flexing when under riding loads. Flexing and internal friction in a wheel robs your energy. Wheel flex starts where your axle attaches to the dropout. As you ride a trail or paved road, the forces that cause wheels to flex are first encountered by the bearings, then the spokes. Understanding how these forces affect the wheel as an entire unit as well as from the tire to axle is the magic in the design of the flex free, friction free Ellsworth Wheels.

## Hand Built Perfection:

- Each Ellsworth wheel is hand built by a master wheel builder
- Each Ellsworth wheel is laced by hand then tensioned, trued and de-tensioned.
- This process is performed 3 times by the master's hand. The accuracy, durability and craftsmanship of the Ellsworth wheel system begins here.

## Hubs and Bearings:

Ellsworth hubs have lots of big, smooth balls. Each hub uses the highest quality Japanese EZO full compliment, sealed bearings.

- Our bearing sets contain more balls that are bigger in diameter.
- More balls means less load is on each ball. Bigger balls provide a larger contact area to carry additional load on each ball.
- The result is an extremely durable wheel that spins more smoothly under load—not just in your hands in the showroom.

**Six Points of Engagement.** After extensive testing and evaluation, Ellsworth relies on the most time tested and proven double three pawl hub with 24 robust points of engagement. With P.O.E designs, more is not necessarily better:

- Increasing the number of P.O.E results in smaller pawls, a less secure engagement and statistically, a less reliable hub. More pawls also results in more rolling friction.
- Three pawls, like a tripod's legs, always make contact together. Adding more legs to a tripod is like having more than three pawls: it leaves one or more legs uneven and not in constant contact with the floor (or your hub). In a four or six pawl design, only two pawls can engage the hub at one time. Think of a 6 legged stool, only two of those legs are going to touch the floor at the same time. The Ellsworth 3 pawl system was designed to be the most durable, least friction and most efficient pawl system.

## Patented Direct Pull Quadruple Taper Butted Spokes:

Straight on Solid. Patented Quadruple Butted, Direct Pull Stainless Steel spokes are kept at a higher tension with a special lacing pattern to resist lateral flex. This unique spoke and lacing design combine for improved wheel tracking and allows you to hold your line in technical riding, braking, accelerating or raling in any terrain condition.

The patented 2.3mm head and quadruple butted, straight pull spokes expand the stiffness from the center of the wheel. Combine this with our over engineered bearings, high tensioned spokes and shot peened XXX9 series alloy rims and you have an extremely faster rolling, stiffer wheel.

- There is no loss of energy from the rotational "wind up" of a conventional spoke. This results in a 30% increase in efficiency during acceleration or deceleration when compared to a conventional spoke wheel.
- Oversized, 2.0mm threads at the nipple to provide extra strength and durability with the increased thread contact area
- Ellsworth Quad Butted Spokes have a breaking tension that is the same as a 14 gauge Stainless Steel DT Swiss conventional spoke, at a fraction of the weight!
- Polished Stainless Steel spokes for maximum hardness and temper. Ellsworth spokes are a natural, bright stainless steel that have not been treated using heat or chemicals that can weaken the temper and compromise strength.
- Increased strength, fatigue life with reduced weight—but you got that already, yea?

## Rims:

Ellsworth Designed XXX9 Tapered Wall Rims:

- Wider Track Tire Contact Patch: A wider rim gives you less tire sidewall flex and more tread on the ground for more traction and control. This also saves weight by spreading the tire out without having to run a heavier and wider tire.
- All Ellsworth wheels use our proprietary, tapered wall rim that is extruded from XXX9 Aluminum, eyeleted for durability at the nipple hole, and shot-peened for increased strength and fatigue life.
- Ellsworth's wider rim design weighs the same as other manufacturer's comparable narrower rims, but gives you the extra strength, durability and control of a wider rim.

## Summary:

These wheels are fast, strong and confidence inspiring at speed and under load! You have to ride them to feel the difference and see for yourself how Ellsworth's wisdom and advanced engineering have re-defined MTB and road wheel design.