

RACE
FACE

Era & Turbine Handlebars

**COUNTER
ARM PUMP.
YOUR SIZE
AND RISE.**

RaceFace.com

THE MORE YOU TRIM THE HARSHER THE RIDE.

Arm pump and hand fatigue make riding more challenging, and not in a good way. No one wants to feel a loss of control or a drop in confidence, and we don't want to cut our riding session short on account of fatigue.

Lots of handlebar manufacturers sell compliant bars at 800mm widths. The problem is less than 20% of mountain bikers actually ride their bars at 800mm, often trimming their bars down to fit. When you trim a bar down, it gets stiffer and less compliant. On average, that's 24% stiffer when trimming a 800 x 20mm bar to 760mm.

We wanted to make something better, but we didn't want rider experience to suffer based on fit and preference. So instead of making one or two bars that worked pretty good for all riders, we made 12. Three width options, three rise options, in both carbon and aluminum.





WHAT MAKES A GREAT HANDLEBAR?

To make the best handlebars on the market, we began a study in 2019 to investigate all the factors that can impact arm and hand fatigue: vertical compliance, natural frequency of materials, and vibration damping.

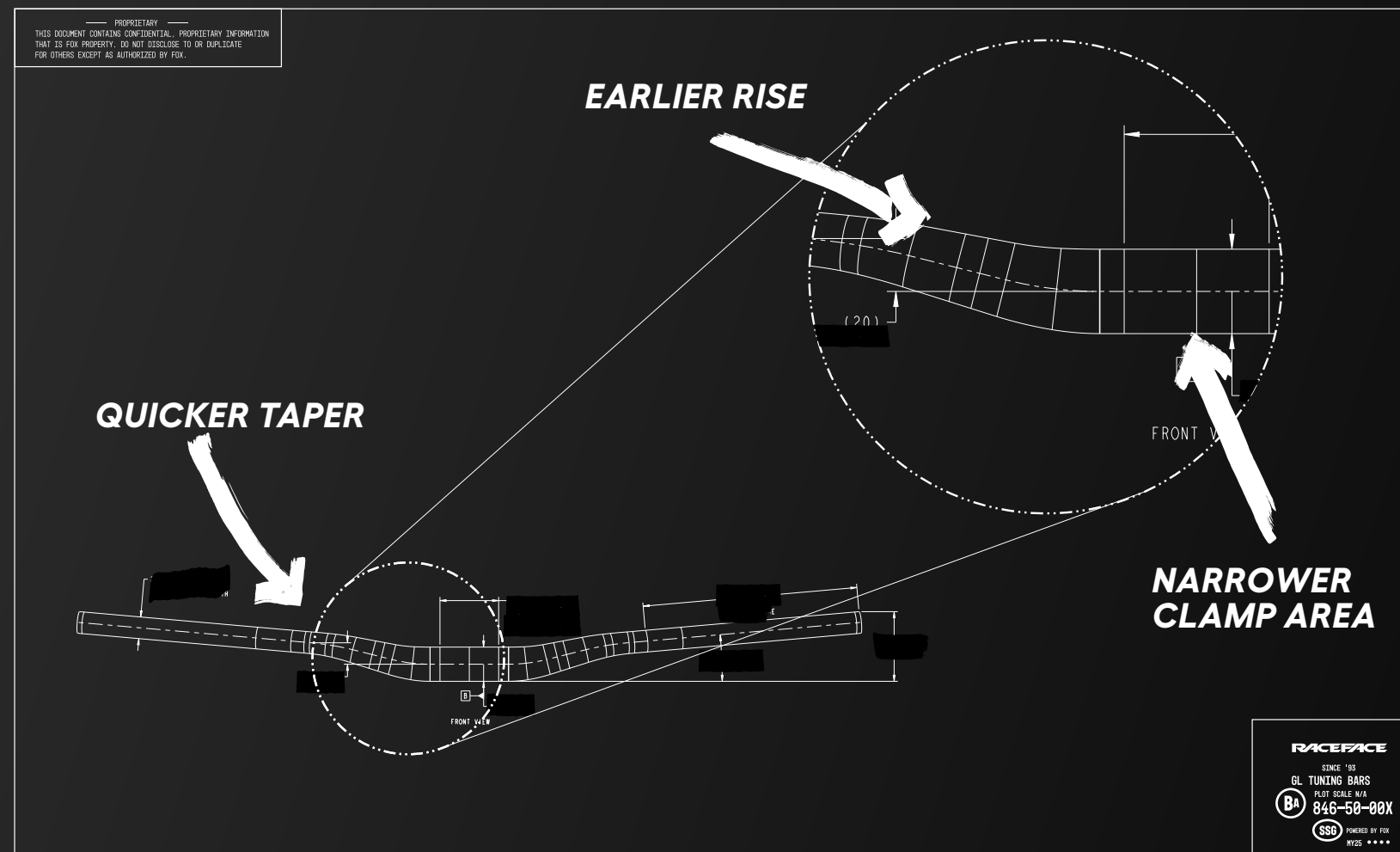
After hundreds of tests, both with world-class athletes and average riders, we came out with clear conclusions.

- 1** Natural frequency is directly linked to vertical compliance: more compliant = lower frequency, and a better ride feel.
- 2** Vibration damping features (like foam filled bars) revealed no advantages.
- 3** Vertical compliance is the most significant, and **the most controllable** contributor to rider fatigue.

We set out to find the optimal balance of vertical compliance and lateral stiffness (based entirely on rider feedback) and found that 85% of riders preferred one particular sweet spot of vertical compliance. The number (which we can't reveal, but it's measured in N/mm) is what we now refer to as the Goldilocks Tune or **GL Tune**.

Anything higher than this number was too stiff, anything lower was too flexible.

ACHIEVING GL TUNE WITH EXTERNAL SHAPE



Designing carbon or aluminum bars to the GL Tune meant revising the external shape of our previous Next R and Turbine R handlebars. The new Era and Turbine bars have:

- 1 A narrower clamping area for stems
- 2 A rise and taper that starts earlier (the narrower clamp area allows for this)
- 3 A quicker taper resulting in a bar diameter that's 10% smaller (than preceding bars) throughout the rise while still having the standard diameters in the stem and control clamping areas.

These three things let us achieve our desired vertical compliance while sticking to a traditional round-bar shape.*

*Wondering why we didn't pursue an oval handlebar? See the Appendix at the end of this document.

REFINING FOR EVERY SIZE, RISE, AND MATERIAL.

With our GL Tune in hand and external shape determined, it was time to optimize the bars for every rider using different widths, different rises and different materials.

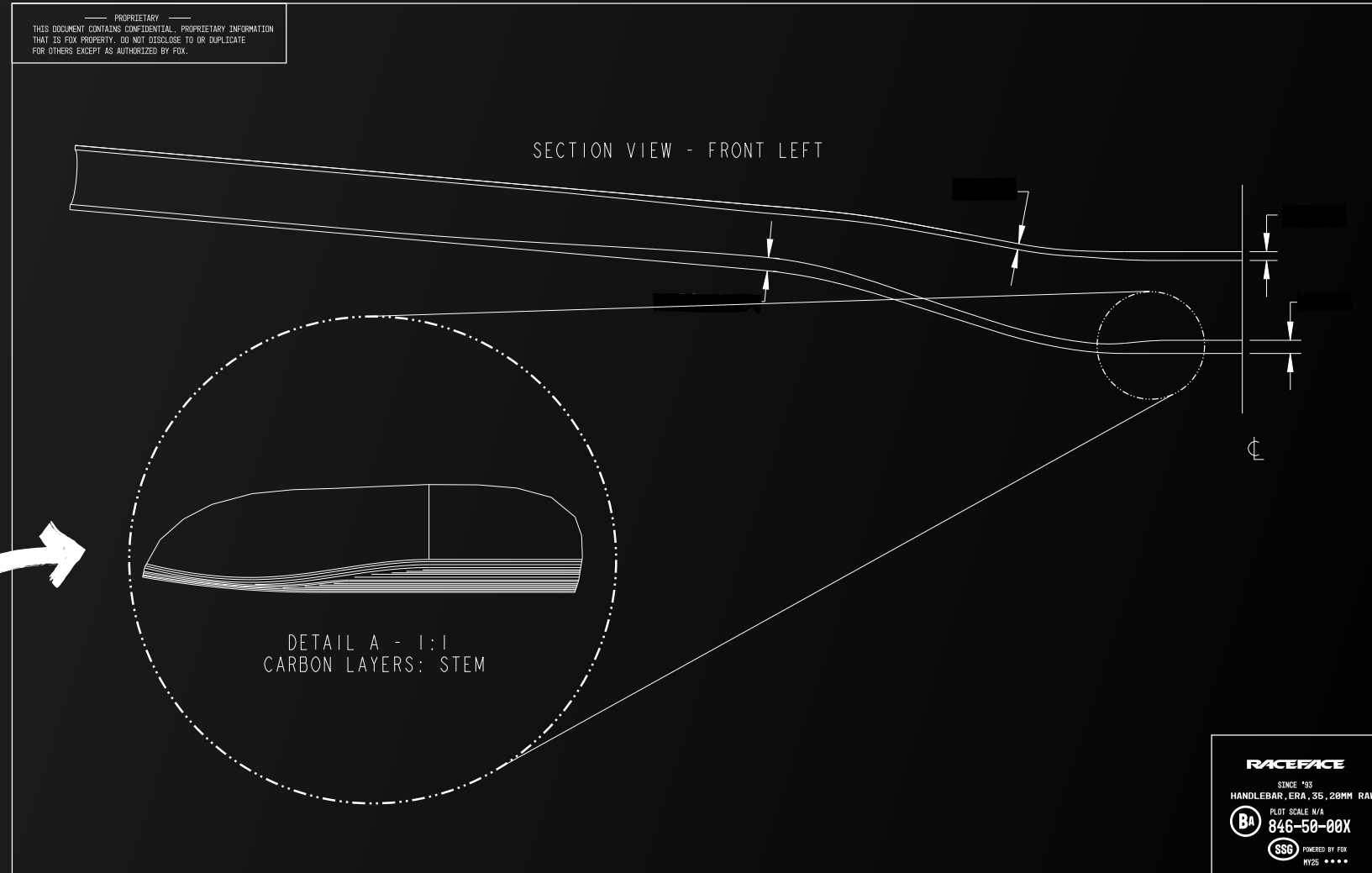
We created an entire range of flex profiles and layups for a consistent feeling of compliance across each width and rise option for all Era and Turbine handlebars. We did this in different ways for carbon and aluminum (see the following two pages).

We created six carbon and six alloy bars to ensure that all riders reap the benefits of vertical compliance – not just those on 800mm bars.

OPTIMIZE CARBON: 96-PIECE UD LAYUP

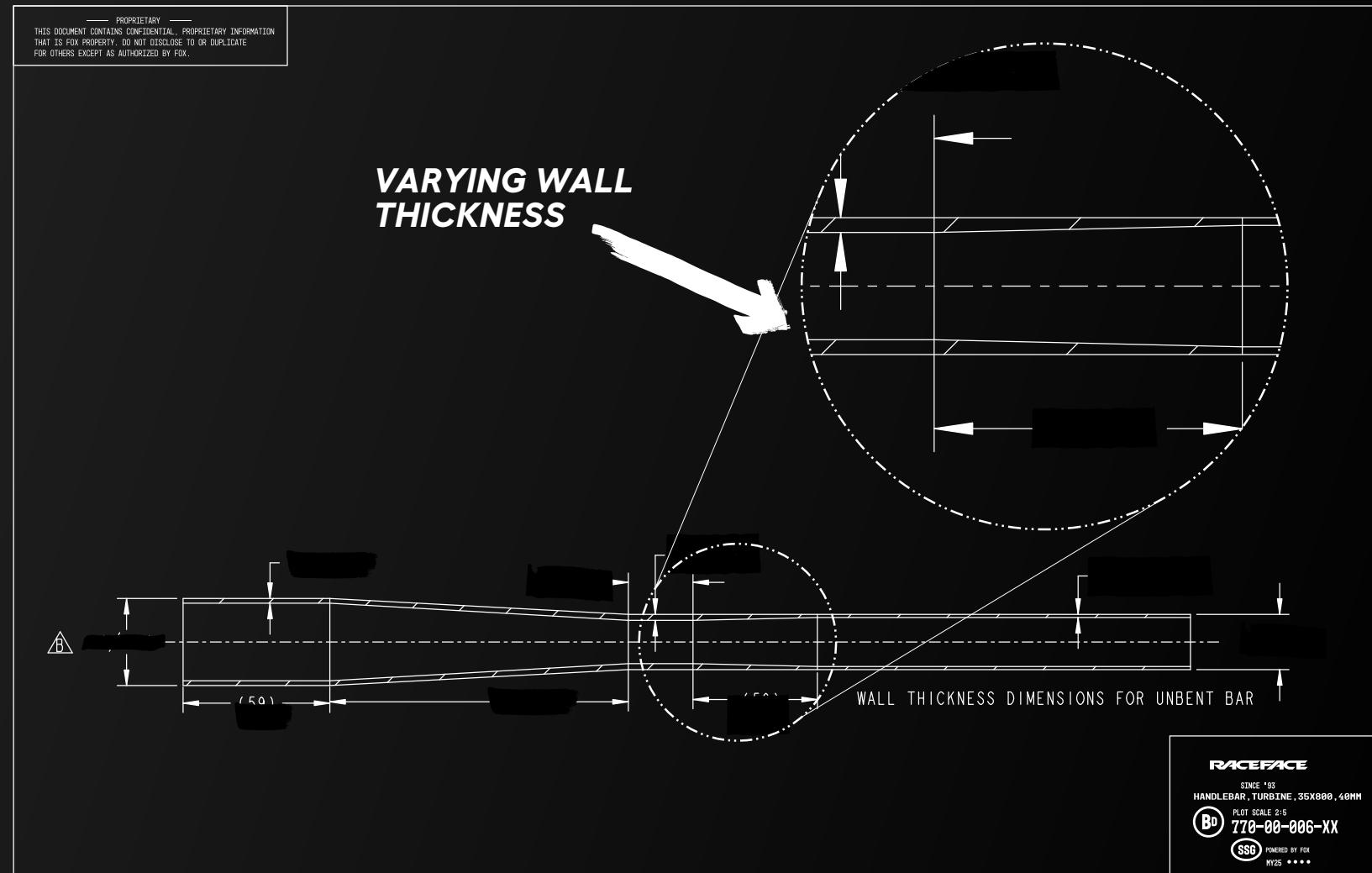
With Era carbon bars, we optimized compliance by creating bar-specific carbon layups. That meant tuning the placement, angle and quantity of nearly 100 pieces of unidirectional carbon, each about 1/10th of a millimeter thick.

**BAR-SPECIFIC
LAYUPS FOR
OPTIMIZED
FLEX PROFILES**



OPTIMIZE ALLOY: INTERNAL BUTTING

For alloy Turbine bars, we achieved compliant ride feel using internal butting. The internal walls of the Turbine bar go from thick to thin in different areas to achieve the strength and flexibility needed for a great-riding bar. For all the Turbine variants that meant changing the position, degree and rate of these changes, requiring extremely precise aluminum engineering.





Hand-laid carbon fibre bound with a toughened epoxy resin.

For the highest strength to weight ratio of any bar we tested.

10mm, 20mm and 40mm rise options.

For rider positioning according to preference and discipline.

Grey, Stealth, Orange, Red, Blue and Kashmoney.

For ultimate in colour coordination.

220g

800 x 40mm configuration.

760mm, 780mm and 800mm widths.

For proper bike fit with minimal bar trimming.

35mm stem clamp compatible.

Maximum stem clamp width of 60mm.

Rated for eMTB use.

With Class 1 and Class 3 e-bikes.

8° back sweep | 5° up sweep.



10mm, 20mm and 40mm rise options.

For rider positioning according to preference and discipline.

760mm, 780mm and 800mm widths.

For proper bike fit with minimal bar trimming.

Black, Orange, Red, Blue, Stealth, Kashmoney and Purple.

In true Race Face fashion.

315g

800 x 40mm configuration.

Precisely engineered 7075 Aluminum.

For consistent compliance, and the strength we're known for.

35mm stem clamp compatible.

Maximum stem clamp width of 60mm.

Rated for eMTB use.

With Class 1 and Class 3 e-bikes.

8° back sweep | 5° up sweep.

COMPLIANCE. EVERY WIDTH. EVERY RISE. EVERY RIDER.

Era and Turbine handlebars are the most advanced handlebars ever produced by Race Face. After five years in development, they've seen more than 4,000 hours of field testing and we can confidently say we have an answer to arm pump and hand fatigue. Era and Turbine bars allow you to ride harder, faster and longer, bringing consistent compliance to every width and rise, for every rider.

The Era and Turbine handlebars are backed up by our Lifetime Warranty inclusive of crashes. For a full rundown on the conditions of coverage, head to our [Lifetime Warranty](#) information page.



Lifetime Warranty

— Crashes Included —



APPENDIX:

WHY OVAL AIN'T IT

Oval handlebar constructions are popular right now, but optimizing vertical compliance using an oval handlebar makes two big assumptions:

- 1 That most people do not roll their bars to achieve better bike fit during setup.
- 2 All the forces imparted on a bar are all applied in a single plane.

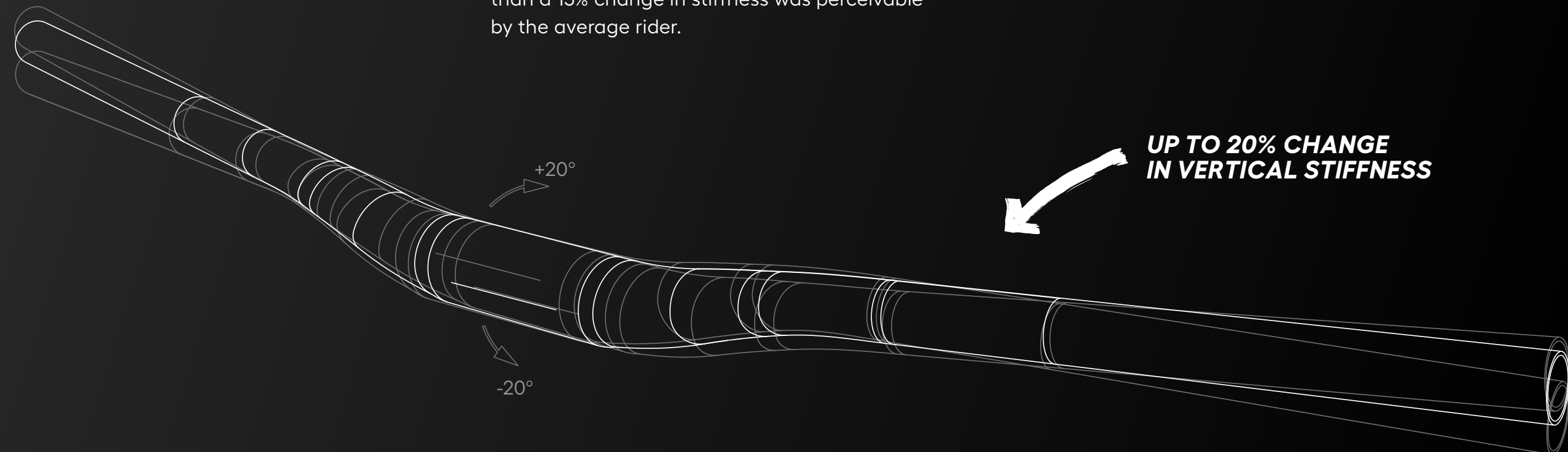
We don't agree with these assumptions.

Bar roll is a matter of personal preference and bike fit, but as you roll a bar forward or back, forces are applied on the bar in directions not optimized for vertical compliance. IE rolling the bar makes it stiffer and less compliant.

When rolling the leading oval carbon bar from -20 to +20 degrees – the typical adjustment range – our tests found up to a 20% change in vertical stiffness. That's more than three times the change in stiffness found when rolling an Era handlebar within the same range (just 6%). For context, our studies found that any more than a 15% change in stiffness was perceivable by the average rider.

As for forces being imparted in a single plane, the reality of riding a mountain bike is that rider weight – and thereby the forces applied to a bar – are constantly shifting forward and back. When you consider rocks, roots, and other trail features encountered on a bike, the plane of force application is always changing.

For Race Face, oval just ain't it.



**UP TO 20% CHANGE
IN VERTICAL STIFFNESS**



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