

EMBARGO 2025/03/11 – 0:00 CET

**WHY THE MTB WORLD SHOULD GET
NEW HANDLEBAR MEASUREMENTS**



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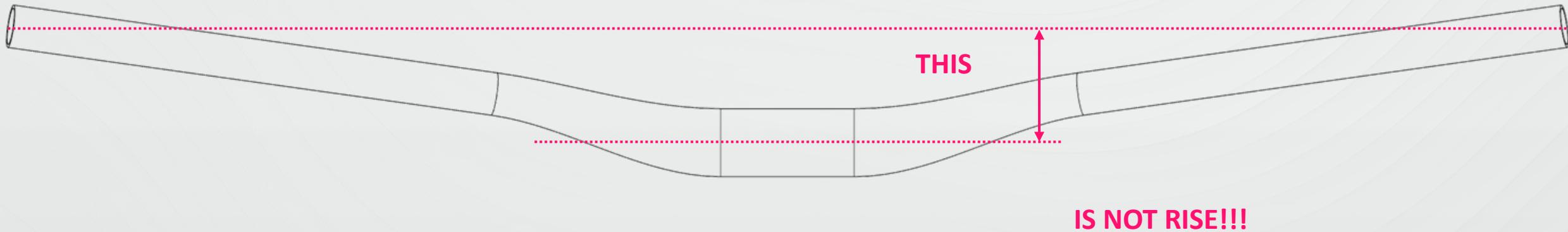
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1. MISUNDERSTANDING THE RISE

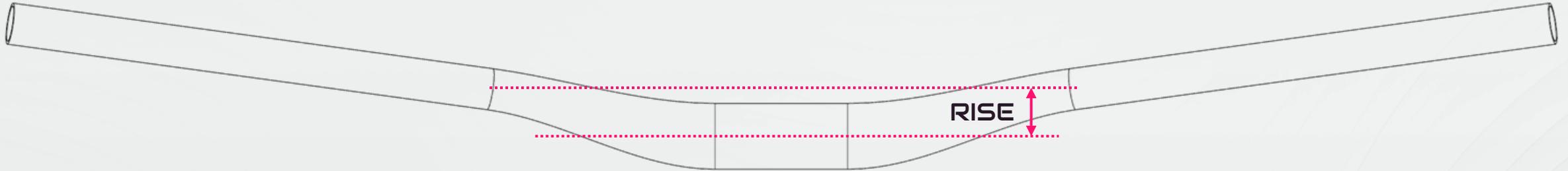
When kicking off development of our handlebars in 2020, it was the first time we actually dealt in detail with handlebar measurements.

And while benchmarking the market options, very much to our surprise, we had to find out that rise was not exactly what we thought – and we are sure most of you won't be less surprised.



In fact, when manufacturers specify their handlebar geometry,

RISE is typically this:



With very few exceptions, „rise“ is typically* more or less defined as the vertical height difference between

- a) stem mounting axis
- b) the beginning of the straight „control“ portion of your handlebar.

*some manufacturers may also use a slightly different definition for the exact position of the rise point but generally it is **not** what 99% of people, including us, other industry people and magazine folks, associate with: It's not the actual „height“ of the handlebar.

We can only assume that the term rise is a relic from a time when handlebars had no upsweep.

Back then, rise was then the „height“ of your handlebar. It made sense.



Nowadays, however almost every MTB handlebar has an upsweep, rendering „rise“ as a useless specification for the overall handlebar height.

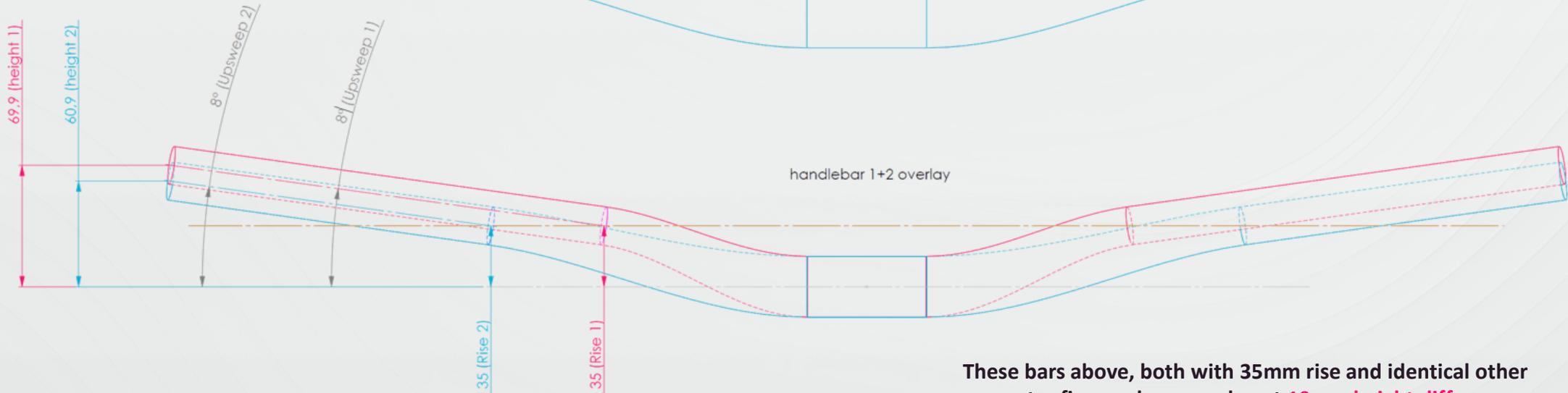
But the majority of people still think that rise is the overall height of the handlebar, not knowing that the bar is in fact much higher than they think.





The problem, however, is not so much that we are confusing rise with the actual height of the bar.

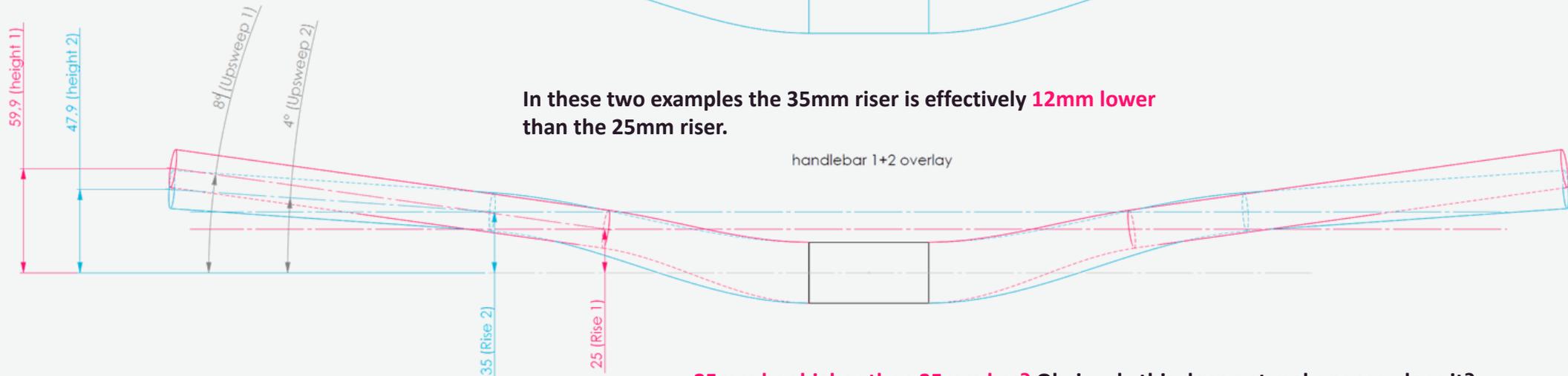
It is much more that rise is misleading:
Two handlebars of (seemingly) identical geometry can in fact be very different.



These bars above, both with 35mm rise and identical other geometry figures, have an almost **10mm height difference** (70mm vs. 61mm)



This also leads to the paradox that a 35mm riser can turn out to be lower than a 25mm riser.



25mm bar higher than 35mm bar? Obviously this does not make sense, does it?

At BikeYoke we believe the current system of how to specify handlebar geometry is nonsense. Rise is not only suggesting something different from what you expect, but it's also a measurement that's not giving relevant information about its dimensions at all. Rise is also not meaningfully comparable between different handlebars. We had to believe there was a better way to measure bars.

At BikeYoke we are going to define all our handlebars using a reasonable – and most importantly unambiguous - measurement and call it **STACK**.

STACK is already commonly known from frame geometry and it even exists in the same coordinate system.

Handlebar stack directly adds to your frame stack.



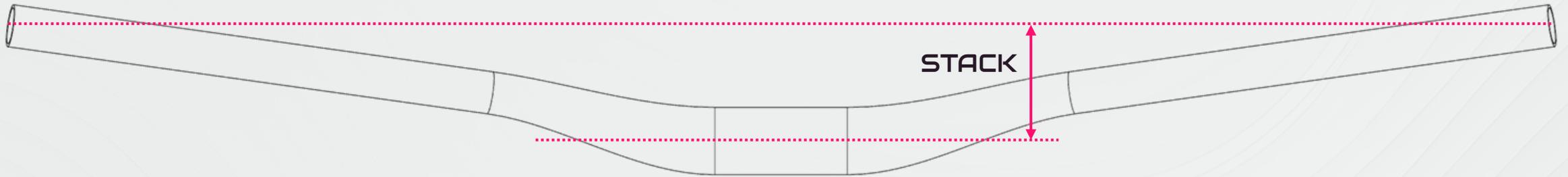
STACK is already what most people think of when they hear about rise (it's the „de facto rise“), so it just makes sense.

STACK clearly and unambiguously defines the height of the handlebar you feel.

We encourage every handlebar manufacturer to follow this idea and implement STACK as the new industry standard for defining handlebar height.

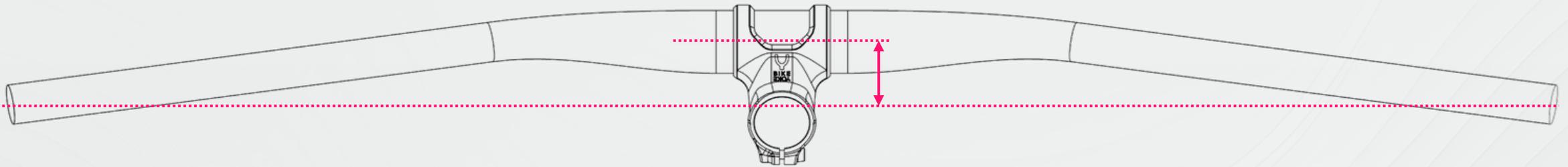
Of course **STACK**, together with backsweep and upsweep, changes with bar roll.
If you roll your bar forward, your bar ends will go higher.
If you roll your bar backward, your bar ends will go lower.

Just as any other geometry figure, **STACK** should be measured/specified at the intended neutral position of the handlebar - the position the handlebar was originally designed for.



2. THE SETBACK QUESTION

When designing a handlebar, one does not only have to think about how much stack you want to have. You also need to decide for backsweep and the resulting setback.



In the same way „riser“ handlebars offset your hands upwards, backsweep effectively shortens the cockpit and effective stem length and offsets your hands to the back

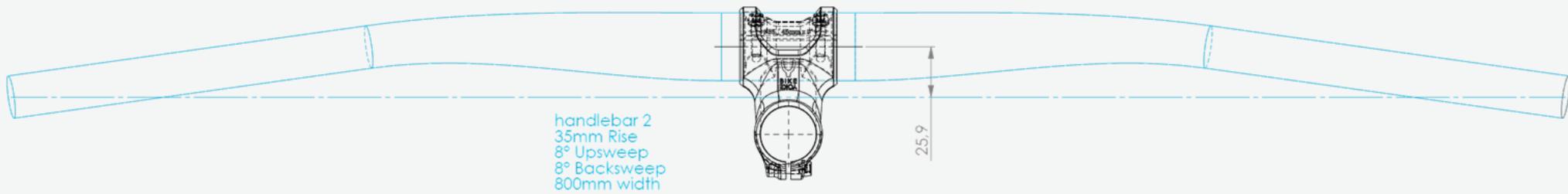
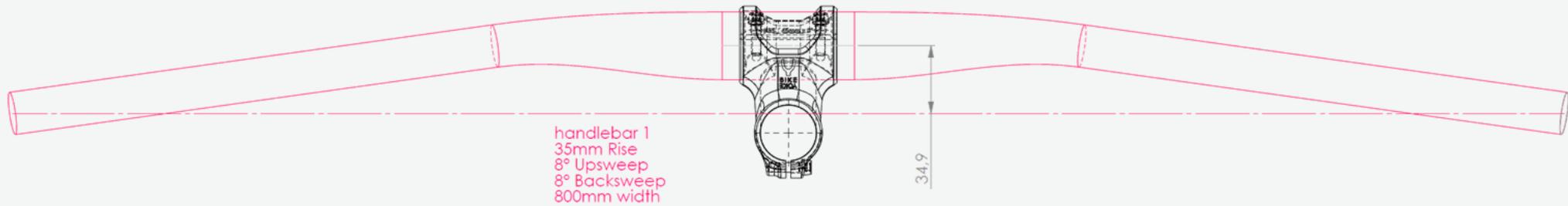
And we all know how important just 10mm stem length/cockpit length can be for an individual.

The question we had:

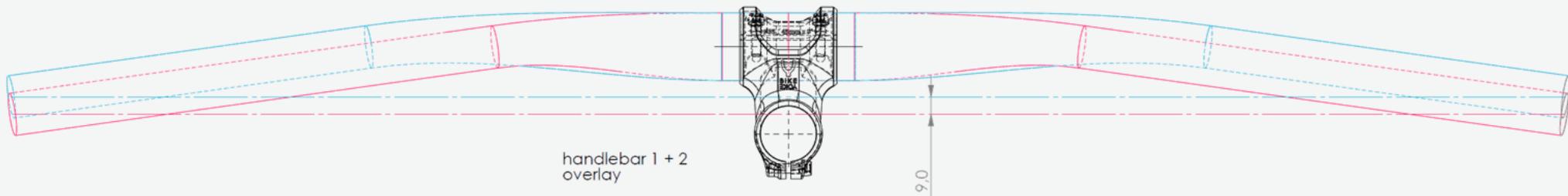
Why is this measurement not specified in any (at least not that we are aware of) of the current MTB handlebars on the market?

How can you know about the setback of your handlebar? It's a critical dimension of your handlebar.

45mm stem with two handlebars of **seemingly „same“** geometry...

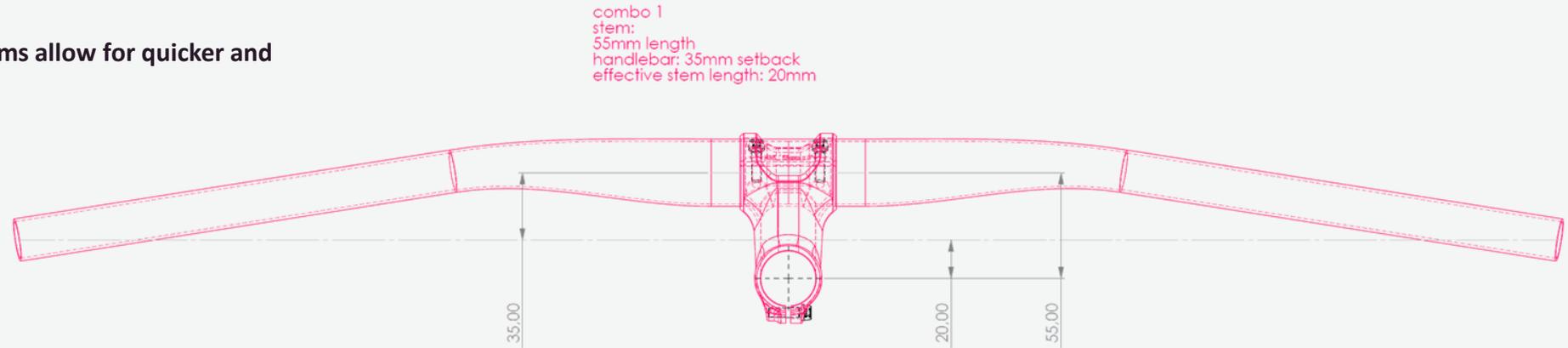


...but 9mm difference in effective stem length and cockpit overall length.

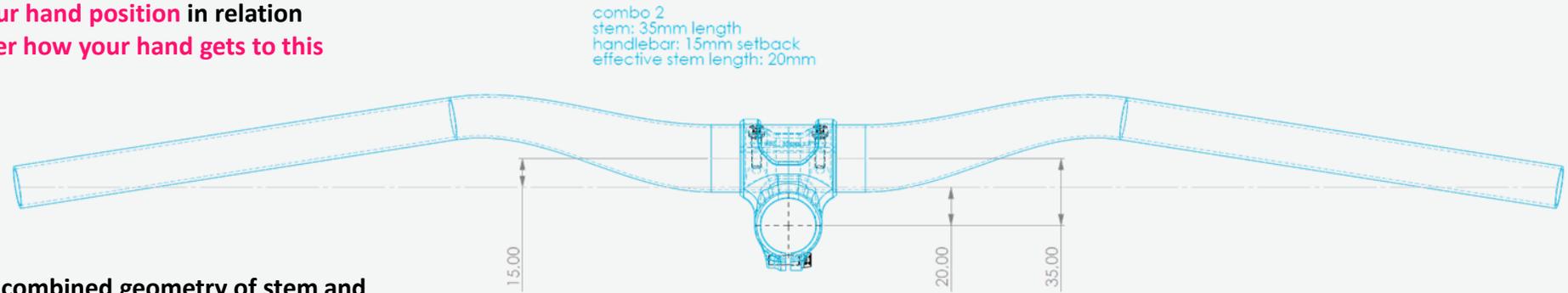


Everyone knows how shorter stems allow for quicker and more direct steering inputs.

Or don't they?

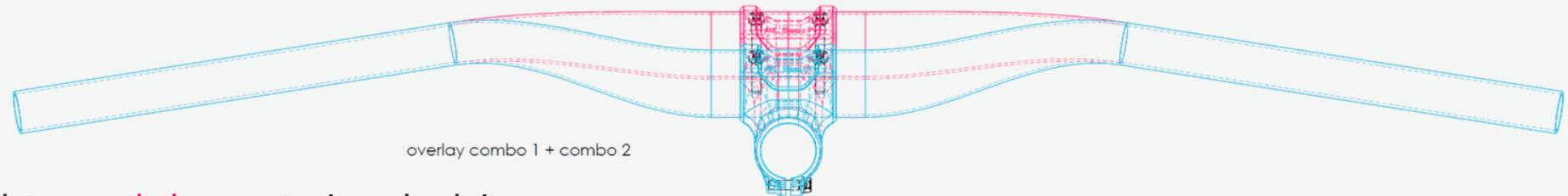


Fact is:
Relevant for steering feel is **solely your hand position** in relation to the rotation axis. **It does not matter how your hand gets to this position. The position is important.**



And this position is defined by the combined geometry of stem and handlebar together.

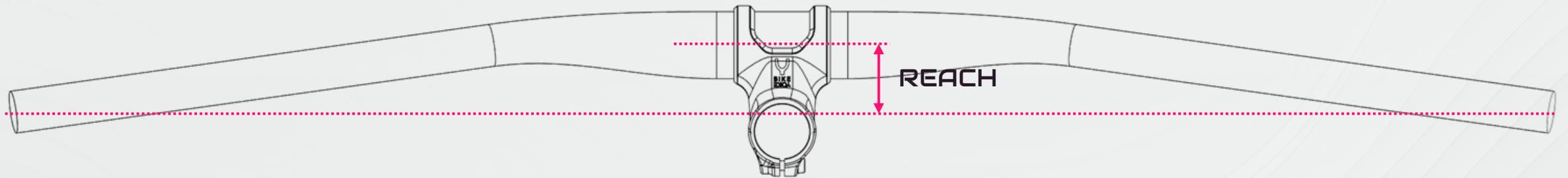
This means:
Handlebar setback is just as important as stem length!



Both these setups above feel and steer **exactly the same** steering and cockpit geometry despite a 20mm stem length difference.

Disregarding individual stem length and individual handlebar setback:
It is solely the resulting sum of stem and handlebar combined that defines the steering feel and cockpit length.

Handlebar setback is just as important as stem length for your cockpit and steering feel and so it only makes sense to address the handlebar setback in the geometry specs.

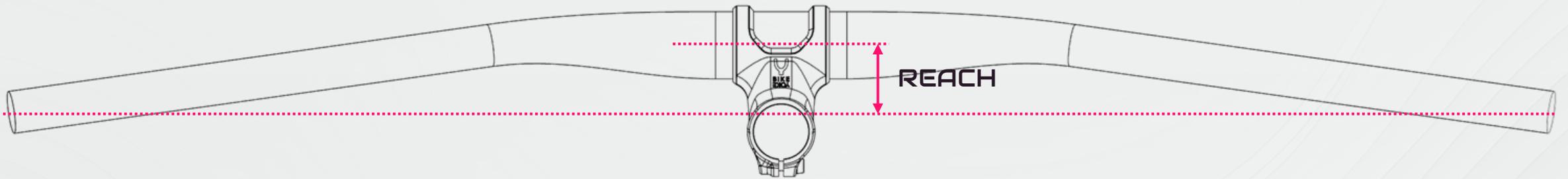


At BikeYoke we have decided to specify the setback of our handlebars as „**REACH**“.
Reason being the same as for **STACK**: It is a commonly known term in frame geometry.
Frame REACH and handlebar **REACH** coexist in the same coordinate system and directly add or subtract from each other.

REACH is defined as the horizontal distance between handlebar mounting axis and center of handlebar tips in neutral position.

Of course handlebar REACH, together with handlebar STACK, backsweep and upsweep, changes with bar roll.
If you roll your bar forward, your handlebars will move forward.
If you roll your bar backward, your handlebars will move back.

Just as STACK, **REACH** should be measured/specified at the intended neutral position of the handlebar - the position the handlebar was originally designed for.



We encourage every handlebar manufacturer to follow this idea and include REACH in their specification sheets.

3. BIKEYOKE HANDLEBAR MEASUREMENT SCHEME

At BikeYoke we simply believe that customers deserve meaningful and universally comparable specifications for handlebars which are an essential ingredient for an individually fitting ride.

It's clear that currently used handlebar specifications have following issues:

1. Handlebars with identical geometry figures (Rise, Width, Backsweep, Upsweep) can in fact be very different.
2. Rise does not give you an idea about how high your bar actually is.
3. There is currently no information about handlebar setback whatsoever

A new method of measuring does not make handlebars better.

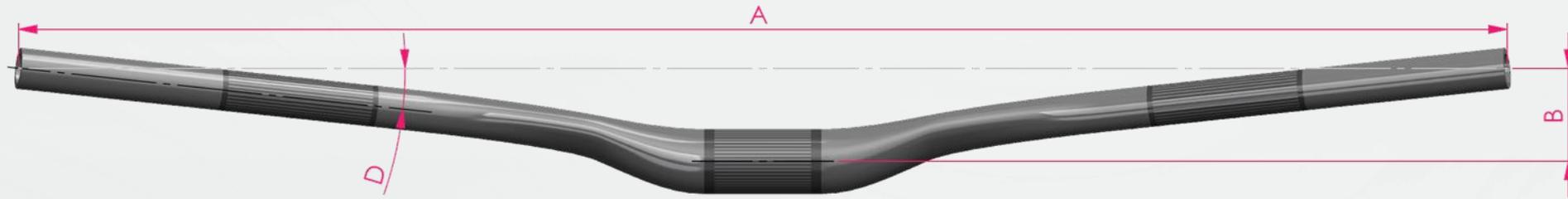
It also does not change the fact that all these measurements change with bar roll.

But it does not add any cost for the manufacturer and the new measurements are much more precise and useful for the customer.

The changes are not big and everyone understand what they mean:

1. Replace rise with **STACK** (what already most people think rise is)
2. Add **REACH**

All the rest remains as is.



Bikeyoke will use this scheme for their handlebar geometries going forward:



Every handlebar can be defined **meaningfully, clearly and unambiguously.**

We encourage every manufacturer to follow.

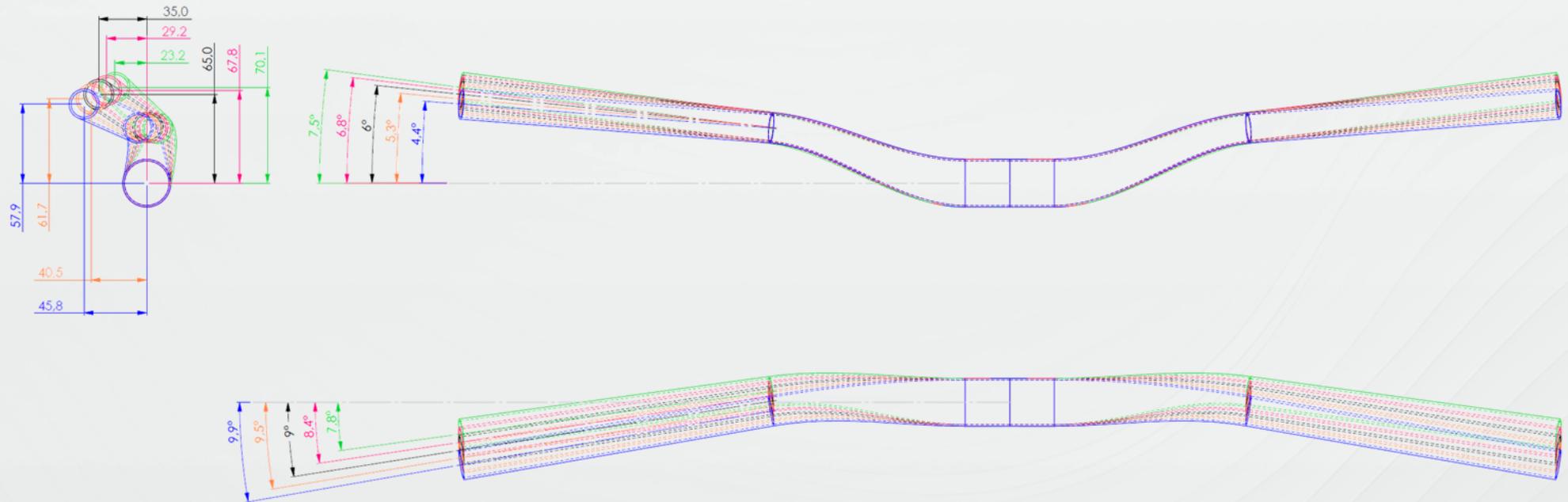
A	overall width	800 mm
B	stack	50 mm
C	reach	-35 mm
D	upsweep	6°
E	backsweep	9°

4. ADDITIONAL INFORMATION - BAR ROLL VS. GEOMETRY

Customers intuitively set up their bar with an individual bar roll, which typically slightly deviates from the neutral setting.

Of course, this will have influence on the effective geometry figures.

For this reason, BikeYoke provides additional drawings showing the influence of bar roll on geometry to give an idea what happens when the bar is rolled forward or backward.



black = neutral
 orange = 5° backward rotation from neutral
 blue = 10° backward rotation from neutral
 pink = 5° forward rotation from neutral
 green = 10° forward rotation from neutral

	Stack (mm)	Reach (mm)	Upsweep	Backsweep
10° forward rotation	70,1	23,2	7,5°	7,8°
5° forward rotation	67,8	29,2	6,8°	8,4°
NEUTRAL	65,0	35,0	6°	9°
5° backward rotation	61,7	40,5	5,3°	9,5°
10° backward rotation	57,9	45,8	4,4°	9,9°