Boost vs Non-Boost

Very Brief Summary

- If your bike is running a 'standard 142mm x 12mm' rear axle you will require a **6mm offset chainring**. (Ideal **chainline 49mm**)
- If your bike is running a new 'BOOST 148mm x 12mm' rear axle you will require a **3mm offset chainring.** (Ideal **chainline 52mm**)

What's the difference in Sram cranksets between BOOST & NON-BOOST?

Well nothing actually – luckily the crankset remains the same it's just the chainring offset that is either 3mm or 6mm and these are interchangeable!

Do these cranksets come standard as BOOST or NON-BOOST?

All Sram cranksets come standard as **NON-BOOST** unless specified as **BOOST** in the product name. Don't worry, if you looking for a **BOOST** crankset we will be able to swap the chainring out for you to make sure you get the correct crankset for your bike – just drop us a message! This will change in time as **BOOST** will be trickled down to all mountain bikes.

So what's the difference and why has BOOST been introduced?

BOOST frames or bikes use a wider 12 x 148mm rear hub width

By now I'm sure you have seen an article or two floating around about the new Boost 148 hub standards. Maybe you've read some forum posts regarding the issue with people acting like someone just killed their puppy. But what exactly are the new Boost standards and what do they mean to you? Lets discuss.

In the beginning mountain bikes generally had QRs with 100mm spacing in the front and 135mm spacing in the rear. Within the last 10 years, QR's have given way to the thru axle. The thru axle offers a much stiffer and more secure platform for bigger hits and harder cornering. For the most part, we see 15mm or 20mm thru axles in the front and 12mm thru axles in the rear.

With the increasing popularity of thru axles, we saw the introduction of the 142x12mm hub and axle standard. These new 142mm hubs replaced the 135mm standard that had been around for years. But there is one important thing to remember about this standard: The distance between the two dropouts on the frame is still 135 millimetres, with an extra 3.5 millimetres of inset on each side built into the frame dropout. This 3.5 millimetres is used to guide the hub into the frame and self-centre the wheel, making thru axle installation much easier.

Most hub manufactures offer replaceable hub end caps to convert their hubs between 135mm and 142×12. So while frame designs changed, the hubs for these two standards still have the same spoke flange spacing and other dimensions.

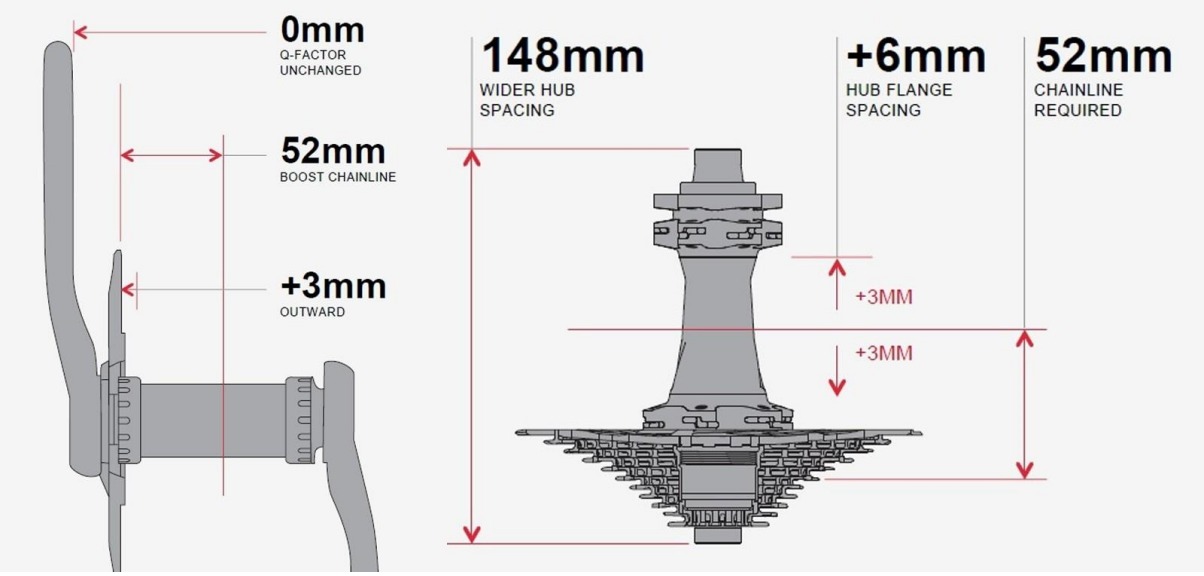
Now that we have some background on hub spacing's, lets talk about wheel size. Everything was designed and engineered in the mountain industry around 26 inch mountain bike wheels. However we now have 27.5 and 29-inch wheel sizes, but the hubs are still the same width. With larger diameter hoops, spokes become longer. These longer spokes mounted in the same width hub create smaller spoke bracing angles. The spoke bracing angle is the angle formed between the spoke and the vertical plane. Larger spoke angles are able to balance a larger component of the lateral forces

exerted in the horizontal plane during loading. So the end result is that 27.5 and 29-inch wheels are weaker than 26-inch wheels with current hub standards.

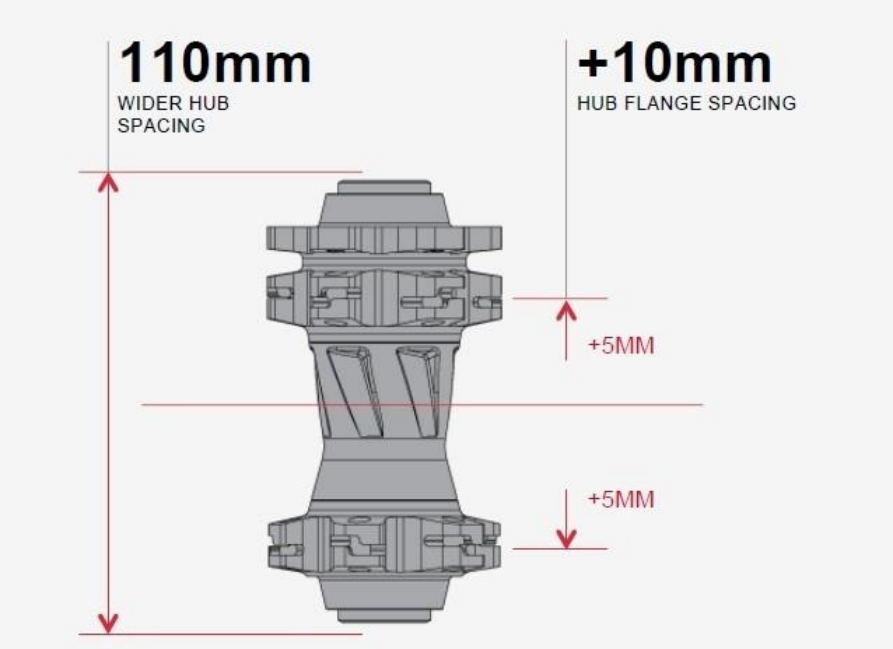
Enter Boost 148 and Boost 110.

These two hubs move hub flanges outward. By moving the hub flanges outwards, spoke angles increase, creating a more stable base. So **BOOST** standards maintain the ratio of spoke length to bracing angle seen in 26-inch wheels resulting in, “26-inch stiffness from a 29-inch wheel.”

BOOST 148 adds 3mm of spacing on each side of the hub. But unlike the 3.5mm difference from 135mm to 142mm, **BOOST 148** sees an increase in flange spacing, not just axle endcap width.

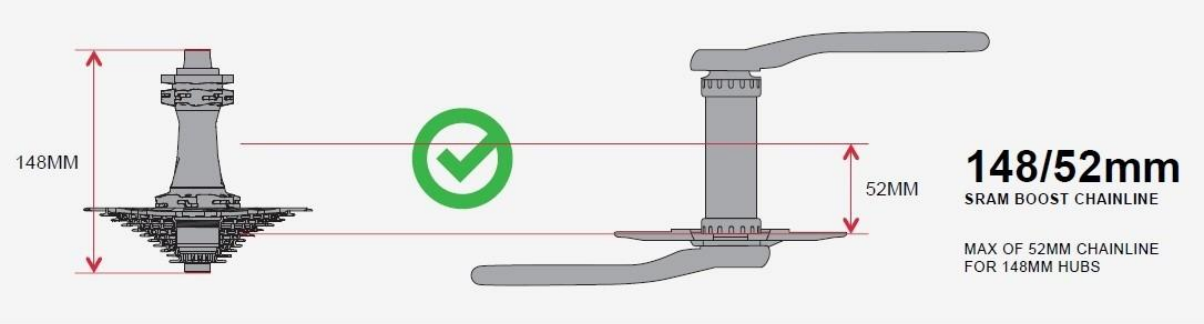


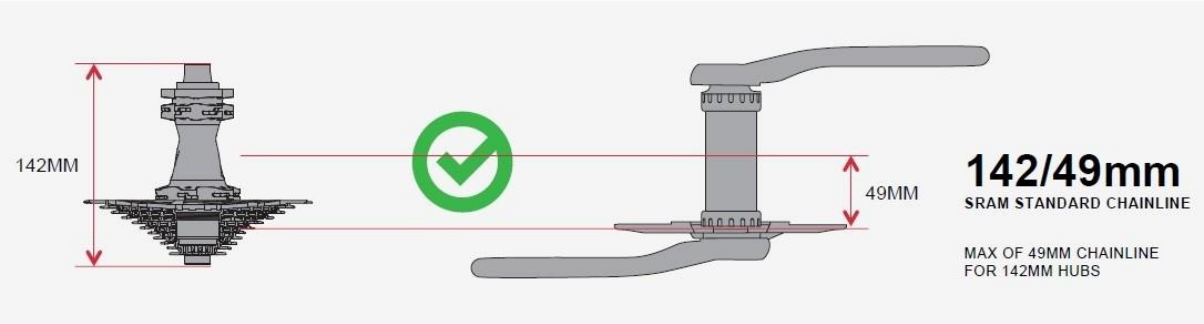
BOOST 110 uses a 15mm thru axle and moves hub flanges outboard by 5mm when compared to 100mm hub standards. This 5mm outboard movement affects the spoke bracing in the same way as the 3mm shift on 148mm rear hubs, increasing spoke angles and creating, “the stiffness of a 26-inch wheel” in the front as well.



Now here comes the tricky part. With these minor shifts in flange spacing, the brake rotor mount location and the freehub body spacing have to be taken into consideration. Everything is shifted slightly outwards. So newer forks with the **BOOST 110** standard have also been designed to account for a shift in rotor and caliper location. That's why **BOOST 110** is actually different than the 110x20mm thru axle standard that already exists. The 110x20mm hubs seen on bigger forks still have the same rotor mounting as a 100x15mm hub.

Rotor shift is simpler than freehub body shift, because now with **BOOST 148** the chainline has been altered by 3mm. With a 3mm increase in chainline, it is necessary to move the chainrings outboard by 3mm as well. Luckily this 3mm shift can be accomplished with a redesigned crank arm spider. The Q-factor of the crankset and the BB width remain the same. For these reasons we will now see the introduction of Boost 148 specific cranksets that are necessary to achieve proper chainline. With the shift outwards, the frame is afforded more clearance, which then allows the frame designer more tire clearance and will maintain a short chainstay.





A perfect example of this change in crankset design is shown by Shimano's introduction of their B-series cranksets with the release of Deore XT M8000 11-speed mountain groups. Shimano released standard 1x, 2x, and 3x cranksets for their M8000 series, but also introduced M8000 **BOOST 148** compatible cranksets alongside them. This is a good indication that while **BOOST 148 and 110** will be around, they will not immediately overtake the industry and force you to buy a new frame and new wheels.

So if you are purchasing a new bicycle, **BOOST** standards are definitely something to consider. But if you already have a killer ride, then don't worry, you will still be able to source parts for your 100mm and 142mm hubs for the foreseeable future.